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TO IMPROVE THE SOIL AND THE MIND.

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The Cultivator & Country Gentleman.

AN AGRICULTURAL COLLEGE.

BY JUDGE FRENCH.

One of the distinctive features in an agricultural college would be, in general, a course of study of a practical rather than a merely theoretical character, or, as expressed in more accurate terms, applied rather than abstract science. Although we do not hold with Mr. Squeers, that it is necessary for a boy, in order to spell window, to first wash a window, yet we do know that neither riding, nor swimming, nor skating, can be learned by any means without practice. And so it certainly is with all the processes of husbandry. No man can hold a plow or wield a spade to any purpose who has not learned to do so by actually handling those implements. No man can become a competent judge, either of the quality or condition of soil, whether it is rich or poor, too wet or too dry for any proposed crop, whether it is adapted to one crop or another, grass, corn, wheat or roots, without observation in the field. No man can safely go into the market to buy or sell live stock, seeds, manures, or any products of the farm, without practical familiarity with all such kinds of property.

We may proceed a step farther, and say that no proprietor of a farm can command the respect or the attentive services of laboring men, unless they perceive that he is competent to direct them, and that he knows when work is well or ill done. Many gentlemen buy farms and attempt to carry them on, and fail utterly in their utopian schemes, merely because they want this practical knowledge. The owner does not know what a fair day's work is, and complains of a poor fellow, who has delved faithfully for a week, that he has done nothing, and the man at once resolves that he will not again be the victim of hard work and ingratitude both. Outdoor and indoor, a

master or mistress who does not nicely appreciate a servant's labor, can have no good *help*. If scolding is ever useful, it must be justly applied, and all this is especially true in this republican government of ours, where the servant is as good as his master, if not a little better.

Any one, therefore, who expects to labor, or to employ labor, on a farm, needs practical instruction in all that pertains to good husbandry. As well might he command a ship without being a sailor, as a farm without being himself a farmer.

Besides such merely practical knowledge as is indicated in what has been said, an agricultural college would differ from other colleges in devoting more time to the arts and sciences closely allied to agriculture, and less to classical studies and to abstract mathematics, which occupy nearly or quite half the usual college course.

We are aware of the folly of attempting to define the difference between abstract and practical knowledge. Many of our legislators seem to imagine that no knowledge is agricultural that has not a pumpkin or an ear of corn visibly attached to it; that no root, whether of Latin or Greek, or cube or square, that has not a potato at the end of it, belongs to a farmers' education. That ten times five are fifty, is an abstract proposition, but it really does not become much more practical nor agricultural if we say that five times ten potatoes are fifty potatoes! We can see that Greek and Latin may be omitted entirely from the course, especially in States like Massachusetts, where even the high school teachers are required by law to teach Latin, and where in every town of 4,000 inhabitants, the teachers must also be competent to teach Greek and French. Neither the exclusion nor inclusion of classical studies necessarily tends to the success or failure of an agricultural college. It is a question of expediency, depending much on the means of education afforded by other schools.

The illustration of science by its application to special uses, may well be prominent in one course. Mathematical principles as applied to civil engineering, road and bridge building, architecture, hydraulics and the like, would be thoroughly studied. More attention would perhaps be given to book-keeping, drawing, penmanship, and the details and forms of common business affairs, than is usually bestowed elsewhere. Many a scientific and literary man lives and dies without knowing how to make a charge on a day-book or ledger, or even how to fold and direct a letter decently; and half the graduates of our colleges would be

more puzzled to write a note of hand, or a simple receipt for money, than to project an eclipse.

Dr. Hitchcock, in his plan of organization of an agricultural college, proposes that the president shall be also a professor of *rural legislation*; and we find in Mr. Flint's report, that in one of the German agricultural institutes, they have a course of lectures on agricultural law.

Although this may at first seem strange, a little reflection may show some such instruction to be a very important part of the course of education. The rights and duties of farmers as to fences, ways, water-courses; the right to flow and to drain as between adjacent owners; the rights of riparian owners upon streams, rivers, ponds and tide-waters, are all fruitful sources of strife and litigation. Rights of dower, homestead rights, the law relating to mortgages and other conveyances, the forms of wills and their provisions, the rights of widows and children in estates of deceased persons, the common duties of administrators, executors and guardians, are all subjects of which an intelligent land-owner ought to have knowledge, and we are much inclined to the opinion that Dr. Hitchcock's suggestion is worthy of careful consideration. If mental discipline be a great object of a college course, there is surely no field of study better adapted to afford it than that of the law, and it has this advantage over the classics, that the knowledge acquired by it bears upon the daily business of life.

We often hear the suggestion, that there is great danger that a college education will render agricultural pursuits distasteful. "Be careful," say our wise advisers, "that you do not educate farmers' boys so that they will not be willing to go back to the old farm." There is much plausibility, but very little sense, in this sort of talk. In the first place, an agricultural college is not for farmers' boys exclusively, nor for any class exclusively. It is for *any* boys, be they sons of anybody or nobody, who desire and are qualified for admission into it. We have no schools for lawyers' sons, nor ministers' sons, and we have no intention to compel a young man who graduates at one college to go back to his father's farm, nor to any farm, if he can do better for himself and his country elsewhere. There is no father who desires so to educate his son that he shall go back on to the old, hard, worn-out homestead, unless it is best for the boy and the family that he should. The idea of setting up a college in which we shall systematically cheat boys into the belief that a hard, rocky New-Hampshire farm is a better home for himself and his posterity than can be found in all the world beside, is preposterous. No, if a boy gets through our college respectably, we trust he will be elevated high enough to look the country over, and if sheep-husbandry in Texas, cattle-raising in Illinois, cotton-growing on the Sea Islands, sugar-making in Louisiana, or grape culture in California, is a better business than hoeing corn in Essex County, Massachusetts, that he will know it, and go where his duty and his interest call him, well qualified for whatever he may undertake, and if he finds a better home than his father had, the blessing of his parents will not be withheld. And again, if after a course of education such as we can give him, he finds in agriculture no such promise of profit or pleasure as when he entered our college he fondly anticipated, what harm is

it if he turns to law, or divinity, or medicine, and makes his agricultural education a means of pleasant relaxation, or a collateral scientific study? Above all things, let us educate and liberalize the world, and avoid whatever may tend to cramp and narrow either body, mind or heart.

Since this article was commenced, the trustees of the Massachusetts Ag. College have decided, subject to the approval of the Governor and Council, to locate their institution at Amherst. The site selected is about one and a half miles from Amherst College, and the farm will comprise about four hundred acres of excellent land.

The considerations which decided the trustees to select Amherst for their college, are understood to be various. The town, for natural scenery, in the diversity of its hills and valleys, in its horizon of broken mountain ranges, the general appearance of fertility, and comfort, and thrift, without luxury, is unsurpassed. It is made up and surrounded by a population interested in agriculture, and who know that farming is a good business because they live and thrive by farming. It is not too near any large town, and is yet easily accessible by railway. The influence of the existing college, in refining and elevating the taste and habits of the citizens, is readily apparent.

Although nothing like a union or intimate connection between the two colleges is contemplated, yet the good fellowship which naturally exists between cultivated neighbors engaged in kindred pursuits, the natural sympathy which men of science and letters usually feel, and the aid which professors in each institution may derive from those in the other, it is believed will be of great advantage. Upon any conceivable plan of organization, both institutions will be able to avail themselves, in many instances, of the services of the same professors. Chemistry, natural history, physiology, and some branches of mathematics, will be taught alike in both colleges, and their joint funds will be none too large to compensate the labors of such professors, as, in all future time, it may be desirable to attract into this beautiful valley. Fear has been expressed that rivalry and ill feeling might grow up between students of the two institutions. When, however, we consider that three-quarters of the students of Amherst College are sons of farmers, and that probably the like proportion of the Agricultural College will be of the same class, there can be no reasonable apprehension from that source.

Amherst College has, in a most disinterested and patriotic spirit, freely offered to the new institution the use of its cabinets, laboratories, and even its lecture rooms and the services of its professors so long as may be necessary and mutually convenient, and the citizens of the town tender \$75,000, to be expended for buildings. The plan of organization is yet unmaturing. The general idea, perhaps, as to buildings, is, to erect at the outset one fine central building, which shall contain lecture rooms, museums, libraries, chapel, laboratories, armory, and halls for all necessary purposes, with, perhaps, temporary dormitories for a portion of the pupils.

If dormitories and boarding houses can be furnished by private enterprise, it will relieve both the labors of the officers and the purse of the treasurer. It is believed, too, that no better provision for morals, man-

ners, health or comfort of young men can be devised than by placing them in the families of good citizens of a town like Amherst. The neighborhood of such a village as Amherst, is, in this view, of great advantage to the College.

Of the "physical geography" of the farm, a few words only may be said, and those by way of suggestions to those who are in other States, watching as we constantly are, for more light.

The farm is generally of rich, good soil, and no experiment of this kind ought to be tried upon a farm that is poor; for after all the talking we may do, the tree is judged by its fruits, and so will this experimental farm be judged.

A board of trustees who had no more sense than to select a hard barren tract of land for this purpose, would not have half enough sense to raise any crops upon it. The income of the land should by and by help the funds of the treasury, and instead of the farm being an expensive apparatus, it should help to feed those who labor upon it.

This farm has great diversity and beauty, in the range of hills at one end, upon which may perhaps be placed the building we have named, in the heavily wooded slope toward the plain, in groves of chestnut, and oak and pine, in copious springs gushing from the hills at an elevation sufficient to carry water over all the farm buildings on the estate; in a stream almost through the centre, which, without flowing land to any injury, may be raised into a pond affording a power for an endless variety of useful and ornamental purposes. In short, it is hard to remember in such a place, that we are but a grave and reverend board of trustees, engaged in the solemn business of founding a college, and have no right to be carried away by emotions of beauty, like a parcel of boys and girls. And after all, who can measure the influence of just such natural beauty, and just such beauty of art and culture as here may surround the student in all his student life. On reflection we will enter on the ledger account soberly, to the credit of the farm, the hills, and the chestnuts, and the pines, and the possible fountains, and the beautiful pond, and the sound of the waterfall, aye, and Mount Tom and Mount Holyoke too, keeping watch and ward in the distance.

GRAFTS CONTROLLING THE STOCK.

It was formerly a general opinion that the graft had complete control over the stock; if, for instance, the pear is worked on the quince, the stock had no power to change the identity of the pear, or even to vary in the slightest degree the character of the particular variety. An orchard of dwarf pears, containing 500 sorts, presents the distinctive character of each of these sorts, however slight the shades of difference, in complete perfection. In reasoning, however, on the principles of vegetable physiology, cultivators became much puzzled. They learned that water enters the roots of a tree, and passes upward through the wood in the form of sap until it reaches the leaves. Here it is spread out in a thin stratum to the light of the sun and to the action of the air; it here undergoes a great change, receives important additions of matter, and descends in the inner bark and forms successive layers of new wood on the outside of the former wood. The stem and branches of the tree thus continue to enlarge annually, and the bark must become stretched to accommodate itself to this enlargement,—thus producing the longitudinal cracks seen in the bark of older trees, as the maple, basswood, and tulip tree; or in the loosening scales of the buttonwood, the peeling film of the white birch, and the horizontal streaks of the cherry, beech, &c. The successive layers of new wood

deposited on the outside of the stem, are shown in an interesting manner by cutting a slit lengthwise and loosening the bark of a young tree, and then slipping in a piece of tin-foil between the bark and the wood, carefully replacing the bark by a temporary ligature. The new deposits of wood from the inner bark are now made outside the tin-foil; and by cutting down the tree after the lapse of several years, the annual rings will show the exact number of years that have elapsed since the operation.

But the puzzle of many is this: If the sap passes upward in the form of nearly pure water, and is manufactured over again in the leaves into the particular kind of wood which forms each different tree, why does the stock retain its identity—why does not the elaborated juice from the pear tree, when it goes down into the quince stock, change this quince to pear-wood? If a basswood leaf manufactures the particular kind of wood known as basswood timber, and the leaf of the maple forms maple wood, why does not the leaf of the pear manufacture pear wood all the way down to the tips of the roots?

Investigations of more recent years have answered this question satisfactorily. It has been found that the green or living bark has a similar power of elaboration to that of the leaves, and its proximity to the new and forming wood preserves its perfect identity even to the finest shades of varieties. For example, graft the Yellow Bellflower, with its light colored bark, on the dark stem of the Northern Spy; the leaves of the Bellflower form new wood, and send it downward in the form of liquid wood; the green bark of the Bellflower imparts to it the distinctive character of this variety, and the wood and bark are strictly those of the Bellflower. But as soon as the juice passes to the bark of the Northern Spy it is at once changed to Spy wood, and the distinctness of these sorts will be shown by the light bark of the one and the dark colored of the other. Again, graft on the Bellflower the dark shoots of the Early Joe, and on this again the light colored Sweet Bough. The leaves of the latter will furnish wood for the whole four sorts, but the respective bark of each will maintain its distinct identity. If a bud of each should now accidentally start and produce a shoot, the first would be that of the Northern Spy; the second, the Bellflower; the third, the Early Joe, and the fourth, the Bough. In the same way the bark of the quince on the dwarf pear tree maintains its distinctive character, and the shoots which spring from the base are those of the quince, not the pear, although the quince may have been grafted when smaller than a quill, and have subsequently become half a foot in diameter.

There is, however, a certain degree of change effected by the graft on the stock, which the bark of the latter does not control. This is particularly observable in the character of the ramification of the roots. Set out, for example, three rows, with a hundred apple stocks each, taken at random, either similar or dissimilar in their character. Graft the first row with Roxbury Russet, the second with the Bellflower, and the third with the Tallman Sweeting. After growing three or four years, the roots of the Roxbury Russet will be found to be few in number, strong and horny, and to have penetrated deeply into the soil, rendering them difficult to remove for transplanting. The roots of the Bellflower, on the contrary, will be small, numerous, and nearly horizontal, like those of the dwarf pear, and consequently very easy to dig up; the Tallman Sweeting will be found to have large, spreading, and strong roots. There are many other examples of a similar character familiar to every experienced nurseryman.



RAISING PEACHES IN POTS.

One of the most successful cultivators of peaches and nectarines in pots, is ISAAC PULLEN, of Hightstown, N. J. At the time of a recent visit, on the first day of June, I found trees loaded with beautiful, ruddy specimens of Troth's Early Red, just softening into maturity, and several other varieties preparing immediately to follow. The crop of Hale's Early was gone, having ripened during the latter part of last month. Nothing could present a more beautiful appearance than dwarf trees three or four feet high, hanging full of the matured deep crimson fruit of the Hardwicke nectarines, on one tree of which I counted about seventy specimens.

The last year's ILLUSTRATED ANNUAL REGISTER contains an accurate statement of the mode adopted by ELLWANGER & BARRY, of Rochester, for the cultivation of peaches in pots, their chief object being to secure uniform crops every year in an uncertain climate, as well as to produce early bearing and to test new sorts. But, as no fire-heat is given, they mature but little earlier than the ordinary season. The mode I am about to describe includes ripening with fire-heat and matures the fruit two or three months earlier.

The young trees are taken up early in spring, when one year from the bud, the smallest in the rows being selected for this purpose. They are trimmed to a whip and cut back over a foot in height and placed in nine-inch pots. As the new shoots are thrown out, they are successively pinched in, as often as they have made a growth of two or three inches. In this way they are kept dwarfed at the same time that they are made to assume a handsome form. The pinching process is continued during the second season, none being allowed to bear until the third, when full crops are taken from them. After the first year they are removed to thirteen-inch or full-sized pots. In some instances the young trees are taken up and merely cut back and kept pinched without potting, and the second year placed in square boxes; but the dwarfing process is not so complete in this instance. The full-grown bearing trees have stems about an inch and a half in diameter and eighteen or twenty inches up to the heads. This height of bare stem has been found best both in securing the fruit from being soiled by watering and in assisting its more perfect maturity by a full exposure to air and light. The trees are kept under glass during winter, and the thermometer in no instance al-

lowed to go below zero, as the fruit buds are more easily winter-killed than on trees growing in open ground. Artificial heat was commenced for the present season about the first of the year, and ripe fruit of Hale's Early obtained in less than five months of that time, as already stated. Last year artificial heat was applied about three weeks later in the winter, and the ripening of the crop was more than a month later than the present year. The heat usually applied is sufficient to keep the temperature some degrees above freezing during the night, and up to sixty or seventy in the day-time. As warm weather advances but little fire-heat is required, and after the first of May usually none at all—the heat of the sun being sufficient to maintain the necessary warmth. On the day of my visit the thermometer out doors was nearly up to eighty, but in the peach-house above ninety, although all the ventilators and doors were kept open. The danger feared from a high temperature like this is of the dropping of the fruit—which is only prevented by regular and copious watering. Each tree, when in full leaf and during the growth of the fruit, requires about one gallon of water each twenty-four hours. When the fruit is within about five days of full maturity the trees are placed out doors on the south side of the house, where the exposure and open air completes the process, and gives a fine flavor to the fruit, preventing that insipidity existing in peaches ripened wholly under glass. If they are placed out much sooner than this period the exposure causes the curl of the leaf, and the fruit neither attains full size nor good quality—indeed, it is often quite worthless.

Some of the trees, as already stated, bore sixty or seventy specimens; but this number, the proprietor observed, was much too large, the specimens being both larger and finer in flavor when not so crowded. About two dozen for each tree he thought the right number. The trees under this management continue bearing a few years, and are then replaced by younger ones; but he thinks, by allowing them to bear only alternate years, they might continue in perfection 20 years or more.

The peaches grown here were found on examination not to possess the full flavor of peaches grown in the open air, but much superior to those ripened exclusively in houses. The nectarines, on the contrary, were quite equal to any that I have met with, the noyau flavor commonly so conspicuous in this fruit, being somewhat softened and improved. The house in which these trees were placed, was about 100 feet long and 14 feet wide, and contained about 150 trees. I learned that the fruit would sell for six dollars per dozen in market, and if each tree bore two dozen, a moderate estimate, it would be a return of about \$12 from each tree, or some \$1,800 annually. I did not learn that this sum has been obtained, as the experiment is rather a new one, and the proprietor has raised them chiefly for his own gratification. He thinks, however, that on a large scale the business might be made profitable.

Hale's Early Red has been found here to be the most valuable of all the very early varieties of the peach, ripening at least one week before the Tillotson and Serrate Early York. The two latter being poor bearers here, and ripening only two days sooner than

Troth's Early Red, have been abandoned. An intermediate variety is much desired.

The proprietor of these grounds, who is a successful general nurseryman, showed me a handsome block of young peach trees, which had already sprung up several inches from the bud, containing 110,000 trees. So highly is Hale's Early esteemed, that while trees of the common sorts sell at \$100 per 1,000, Hale's Early brings readily \$200.

The readers of this journal will remember the many instances in which the superiority of planting peach orchards on ridges has been proved by experiment—low lands being much more liable to frost. Some striking instances in corroboration have occurred in this neighborhood. On a ridge about 300 feet high, some miles distant from Hightstown, one orchard has not failed to give a crop in twenty-nine years, and others have proved nearly as successful; while on some flat lands in the neighborhood the crop is often entirely killed. J.

Summer Treatment of the Grapevine.

It is now very generally admitted that the grape is the most certain in its annual crops, the most productive and the most profitable of the American fruits. The apple, pear, plum, peach, cherry, &c., produce their fruit from buds grown the preceding season, and are therefore subject to all the casualties resulting from severe cold in winter, and from early and late frosts of spring; while the grape is produced on wood of the current season's growth, and is seldom injured by frost. Indeed, like the strawberry, it is the most certain of all the fruits. There must ever be an unlimited demand for good grapes, and at fair prices. A knowledge of these facts has within a few years past led to extensive planting of the vine in almost every section of the country, and during the last season there has been an immense number of vines planted, probably more than all that have been planted in the six previous years. Some have planted many acres for extensive vineyard purposes, while thousands of others throughout the land who own but a single house lot have set one, two, or perhaps half a dozen vines where perhaps little else could be grown, but which will furnish a supply of fruit for a family for several weeks. Many of these persons, who have gone quite extensively into the planting, have no practical knowledge of the proper treatment of the vine, and have been content to follow their neighbors, who know but little more than themselves. Evidences of their lack of care of the vine are to be met with all through the country. There is nothing intricate in the training and treatment of the vine, but there is a requisite system, and that must be followed from the beginning, and it is at the start that most inexperienced cultivators fail. When this is the case the only proper remedy is to cut back the vine, whatever its age, to the ground, and start anew. Vines, when planted, are generally produced from cuttings, layers, and what is termed single eyes. This last is the most extensive method of propagation now, and when well conducted makes good vines; but vines from well grown layers are the strongest, and come into bearing soonest. Vines when well grown are best when planted at one year's growth. Plants from single eyes, when not strong, may be root pruned and transplanted for a

second year's growth in the nursery, but beyond this no vine is improved by greater age before setting in the vineyard, and all vines, when permanently planted, whether of but one or more year's growth, are treated the same during the first summer. I had taken up this subject in an article for the Co. GENT. before the close of the planting season, but it was cut short by illness, and what would then have been said will in part be somewhat out of season now. Yet if the error which is most common to inexperienced planters has been committed, it is not altogether too late to remedy it in part.

The natural habit of the vine is to extend itself onward and upward, wherever it can find proper support, as we find them in the forests extending their arms to the tops of the tallest trees, in search of the light and heat of the sun. The object of the vine-dresser is to secure all the advantages that are thus derived from the sun, and at the same time keep the vine subject to his own control, near the earth. There are various methods or forms employed for training the vine, as circumstances or convenience may require, all however, securing the same important end, viz., keeping the vine within its proper limits, and at the same time keeping up a supply of strong, well matured bearing wood of the previous season's growth. Plants, as generally sent out by regular propagators, are cut back to about one foot in length, leaving from four to eight eyes to each plant. If the planting is done before there is danger of "bleeding," it is well to cut back the vine to about *three* good eyes, or if the planting is after March, it is as well to rub off the upper eyes, leaving three. After these start, secure and tie up the lowest strong one, and remove the other two. The single cane is all that is required the first year, and all that should be permitted to grow. It is here that great error is liable to occur with many; they let the every shoot grow, and instead of securing a single strong cane they have a half a dozen weak shoots, neither of which will make a bearing cane for the next crop. Where this error has been committed, the only remedy at the present advanced period of the season, is to pinch back the ends of all the shoots, except the lowest and strongest. This should be kept constantly tied up to a suitable stake. Whether the shoots have been reduced to a single cane at the proper time, or whether they have been neglected, the one that is now selected as the cane for the following year, the laterals should kept pinched back throughout the season. These laterals spring from the base of each leaf, and in order to secure all possible strength to the main cane, these laterals are stopped after the third small leaf has been formed, removing two of them; the one being left to mature, which if removed might have a tendency to injure the bud at its base, which it is important to preserve to fill its office the following year. These side shoots or laterals will start a second or perhaps a third time, and should as often be pinched back, leaving each time one leaf beyond the last pinching. Securing the greatest strength to one main cane, and keeping the laterals shortened, and the vine well secured to stake or trellis, constitutes the chief treatment of the vine the first season after planting, always, of course, keeping the ground clean and mellow. The winter pruning and the subsequent treatment of the vine, is governed in some degree by the method of training which is to be adopted. These may form the subject of another chapter at some future period. Many other points of importance would have been alluded to, could the subject have been reached at the beginning of the planting season.

H. P. B.

Influence of Agricultural Journals.

Together with the influence exerted by the Agricultural papers in promoting better farming by those engaged in that pursuit, they are also to be credited with attracting to it a not inconsiderable number, to whom, but for their perusal, the idea would never have occurred. The author of "Ten Acres Enough" has frankly confessed that such was the case with himself and wife; and in the course of the past ten or twenty years, very many instances of the kind have come to our knowledge, some involving the transfer of large wealth from the city to the country, others on the smaller scale of ordinary farming, and others yet of a more humble but scarcely less interesting kind, where muscle has been almost the only capital at starting in the fields.

Amidst the pressure of our winter business, a letter came to us from a Pittsburg mechanic with a brief outline of his personal history, which is illustrative of the foregoing line of remark, and from the three foolscap pages of which we condense the following statement:

A young workman of 24, employed in a rolling-mill, happened of a Saturday night in 1850 to pick up an Illustrated number of THE CULTIVATOR at a periodical stand. He had never lived in the country nor known anything of rural affairs; but his attention was taken by the pictures, and when he came to read, he found altogether a new prospect opened before him. He subscribed for it, procured the back volumes, and, soon after, Thomas, Downing, and one or two other works on Fruit. At length, in July, 1854, having saved \$250, he ventured to purchase 25 acres of land, nine miles from the city and convenient to the railroad, at \$1,200—borrowing \$100 to make the first payment of \$350, down, the remainder to be paid with interest at the rate of \$150 per year. Of this land, 18 acres were cleared and fenced, but there were no other improvements.

He proceeds to narrate how in 1855 he was able to purchase trees for planting an orchard, to the amount of \$138, but unfortunately many were killed by the unusual severity of the succeeding winter, and a great hail storm, July 4th, 1856, finished nearly the whole of the survivors. Out of 176 trees but seven remained. Notwithstanding this great discouragement, his reading had led him to determine upon Fruit as his leading crop, and he began again the next spring, and has since continued to plant, spring and fall, as his means permitted, until he now has an orchard of about 1,200 trees of the different kinds. He put up a small log house, to occupy with his family during the summer months when the mills are idle, still continuing to work at his trade when they were in operation. He was ere long enabled to pay off his debt and accumulate some money, and has since bought 26 acres of land, adjoining the first purchase, for \$1,800 cash—nearly all cleared, with 100 apple trees in bearing, and including 12 acres favorable in position and soil for the grape.

The letter closes: "I am trespassing on your good nature, Messrs. Editors, but I wanted you to know what that Pictorial CULTIVATOR has done for me;" and we give the above abstract, not particularly to show that our correspondent must be an industrious and "fore-handed" man, but because it seems encour-

aging to those who long for country life, to know of the successes of those who have tried it, and because, moreover, in the present condition of our affairs, it is doing the country a service, we think, to attract as many as possible from the city to the cultivation of the soil.

While we have this letter before us we may copy from it, although not immediately connected with what has been said above, our correspondent's way of PREPARING GROUND FOR THE GRAPE AND FRUIT TREES:

"Where the ground can be plowed I run a common plow, with two horses, 8 or 9 inches deep; I then follow in the furrow with a lifter or large subsoil plow about 20 inches deep. It takes six horses to plow with the lifter. Where the land is too steep to prepare it with the plow, I get it done by hand labor—that is, trenched to the depth of two feet, the stone thrown out on the surface for building stone walls. This costs me \$160 per acre. Market grapes I plant in rows 10 feet apart, the plants 10 or 12 feet apart in the rows; the varieties are the Isabella, Concord, Delaware, Hartford Prolific and Union Village, for market and home use. I run the rows east and west on any exposure but a southern; train them on trellises 8 feet high, some on the renewal system, others on the spur system. For wine, I plant the Catawba, 5 feet apart each way, and train on stakes. I manure with bone dust and pulverized charcoal well saturated with urine."

TRAINING HORSES.

EDITORS COUNTRY GENT.—On page 320, J. J. P., Iowa, inquires how to break a young horse of kicking in harness. The thing is very easily done, and the way is by the Rockwell system of horse-taming. Rockwell is the man that drives a pair of spirited horses without reins. Now if J. J. P. will turn to June CULTIVATOR, page 197, he will find directions for shoeing an ugly horse. Use the same kind of cord, but instead of having it short, it should be ten feet long, so that the person can carry the end back from the horse's mouth to the side of the horse, and thus have the horse under control while harnessing or handling, which should be done in the most careful manner. Instead of having the rope pass just back of the ears, it should pass over half-way down on the neck. Tighten on the cord, not severely, unless it is a severe case, and at the same time lay the harness over the back of the colt, and always be careful that there is nothing about the harness to hurt. By careful usage the harness can soon be slipped off behind and dangled around the horse's legs.

I am not at liberty to write out fully all the treatment of such a horse as J. J. P. describes, according to the Rockwell system, as Rockwell professes that his way of teaching a horse is his own, and he gives two lessons for \$3—and sells a pamphlet for one dollar more, but sells the pamphlet to none but those that have attended his school. I paid the \$4, and feel that I have got the worth of my money. His directions about biting a colt, making a restive horse stand still to be harnessed, or get into a carriage, are each worth the money; and thus the perfect control he gets of a horse's mouth, the manner of making him so as not to be afraid of an umbrella or any thing, or pull at the halter or bridle, are admirable.

I may add that I have no interest in the man or his system, but having suffered in common with others, with horses that were far from being just right, I feel an interest in pointing to a system that will enable farmers and others to overcome and make that useful animal more useful.

J. E. MACOMBER.

Portsmouth, R. I.

SHEEP-SHEARING FESTIVALS.

On the 1st instant the writer attended a Sheep Shearing held by the Ontario County Agricultural Society, at its grounds in Canandaigua. Although that part of the State is one in which much attention has long been given to sheep, including a considerable number of fine woolled flocks of high standing—this was the first occasion of the kind; and we are pleased to be able to say that it met with a degree of success even beyond the anticipations of those most interested.

The turn out of sheep, although not very large, was sufficiently so to occupy in the shearing all the time that could be conveniently devoted to the purpose, and in merit certainly exceeded, as a whole, the expectations we had entertained. We were moreover pleasantly surprised to find so large and gratifying attendance, both from Ontario and adjoining counties. The receipts from admissions (at a charge of 15 cents) were more than sufficient to meet all expenses incurred, and show that nearly twelve hundred persons must have been present. The admirable amphitheater erected some years ago by the County Society at large expense, and now, with the grounds, wholly free from debt of any kind, serves excellently for such purposes, and we were not sorry before the meeting finally adjourned to have the opportunity of congratulating the officers and members so well represented there and manifesting so much interest in the exhibition and its results, upon the flourishing condition of the Society and the many evidences it affords of good management and liberal public spirit. It will not be out of place to add that among those deserving great credit for its past successes and present standing, the common voice ascribes no small share to the former Secretary, GIDEON GRANGER, Esq., who retired at the last election, after eight years' most constant and arduous service, and who still watches its progress with all his old interest, although obliged by other engagements to put off the harness of active office. The present officers, among whom we should name Mr. JOHNSON, the President, and Mr. LAMPORT, the Secretary, are able successors of those who have preceded them.

Thirteen rams were shorn, two years old and over, six ram lambs, the same number of ewes, and eight ewe lambs, with the following results, which we are obliged to condense into as small compass as possible:

RAMS.			RAM LAMBS.		
No.	Fleece.	Weight of Sheep shorn.	No.	Fleece.	Weight of Sheep shorn.
1.	19 lbs. 10 oz.	104½ lbs.	5.	15 lbs. 5 oz.	104 lbs.
2.	21	120½	6.	16	87½
3.	18	107	EWES.		
4.	20	94½	1.	12 lbs. 1 oz.	72½ lbs.
5.	20	136	2.	11	12
6.	18	98	3.	10	0
7.	20	102	4.	14	8
8.	26	113½	5.	9	8
9.	16	142½	6.	9	14
10.	15	132½	EWE LAMBS.		
11.	17	111	1.	10 lbs. 11 oz.	— lbs.
12.	14	89½	1.	11	5½
13.	17	104	3.	12	7
RAM LAMBS.			4.	12	7½
1.	16 lbs. 12 oz.	69½ lbs.	5.	12	1
2.	15	79½	6.	12	2
3.	16	84	7.	10	9
4.	15	108	8.	9	5½

The first prize on rams was awarded to Messrs. Pottle and Goodwin of Naples and Lima, for No. 2 on the above list; the second to W. S. Remer, Penn Yan, for No. 8; the third to Edw. Bronson, East Bloomfield, for No. 6. For ram lambs, the first prize went to S. S. Lush, Victor, on No. 1, the second to C. E. Shepherd, Canandaigua, on No. 5, the third to John Matterman, Canandaigua, on No. 3. For ewes the only prize awarded

was the first, on No. 1, to H. M. Boardman, Gorham, who also stood first on ewe lambs, in which class G. B. Sackett, Canandaigua, was second. Prizes were also awarded to the 1st, 2d and 3d best shearers on the quality of the work done.

The awards on sheep, as we understood, were in view of the quality as well as weight of fleece, and the general merit of the animal. The average weight of the 13 rams' fleeces was 19 lbs. 2 oz. each,—of the animals themselves, when shorn, 112 lbs., showing an average yield of 17 per cent. of their weight in wool. The sheep of course were unwashed, and most of them had been housed and carefully shielded from the weather. The first prize ram, No. 2, was a fine animal, and No. 3 on the list—a lamb of his, owned by Pottle & Dunton, Naples—spoke well for the character of his stock. We were assured that he had not been housed, but was exposed to the rains of this unusually wet season, and that he was dropped by a common ewe bought by Mr. Pottle for \$2.50; he is now two years old, and sheared, as will be seen, 18½ lbs. Among other noticeable rams shown, was No. 5, "Duroc," owned by R. S. Rose, Esq., an extensive farmer and flockmaster, at Branchport; he sheared June 15th, 1863, 23 lbs. 7 oz., and his fleece was now short of a year's growth. The weight of fleece shorn by the 1st prize ram lamb, 16½ lbs., was exceedingly heavy on a carcass of less than 70 lbs., being almost 25 per cent. The ewes and lambs exhibited by Mr. Boardman of Gorham, were very nice.

It is to be hoped that these shearings may be continued in future years, not only from the competition afforded in the improvement of sheep, but also because they bring the members of the Society instituting them more frequently together, and are a beginning in the direction of spring shows, which we have frequently advocated for the purpose of exhibiting breeding animals of other kinds, particularly stallions, as well as seed grains in their respective seasons. It was thought that a week or two earlier in date, would have better suited many leading sheep farmers, who like to shear early, and have a good fleece to show when the autumn fairs take place.

The shearing began shortly after 11 o'clock and continued until nearly four, at which hour the Messrs. Gunn, of the Canandaigua House, had provided a dinner for those choosing to partake of it. Upwards of 200 guests sat down at the tables, and after the repast was concluded the premiums and weights of fleeces were announced, and some brief speech-making indulged in—rendering it a very pleasant re-union, and not one of the least noteworthy features of the day.

A Sheep Show and Shearing had also been held on the previous day, May 31, by the Rushville Union Agricultural Society, of which the Secretary, Mr. GEO. W. STEARNS, furnishes us an account. He says: The day was fine and the attendance large, proving an entire success. The whole number of entries for shearing was twenty-four. The premiums awarded were as follows:

	Weight unshorn.	Weight of fleece.
Rams—1. J. W. Washburn, Gorham,....	114 lbs.	18 lbs.
2. F. B. Green, Gorham,.....	121	17½
3. 2. W. B. Sabin, do,.....	105	18½
Ramlambs—1. D. Bostwick, Potter,....	121	17½
2. H. Kapalee, Gorham,.....	122	17½
	Weights unshorn—lbs.	Weights of fleeces.
Three ewes—1. H. Arnold, Gorham,....	64 65 65	8½ 11½ 10½
2. J. W. Washburn,.....	75 73 69	9½ 9½ 10
Three ewe lambs—1. G. T. Washburn, ..	80 76 75	14 14 11½
2. H. Arnold,.....	66 59 60	11 10½ 10½
3. L. Adams, Middlesex,.....	57 59 58	10½ 11 10½

"Among the Bucks on exhibition, were three exhibited by the Hon. E. B. Pottle of Naples, one of which was his splendid Sanford buck. There were also some very fine Buck Lambs exhibited by Messrs. D. B. Holbrook and Wm. Reddout of Potter, and Henry Green of Middlesex. There were also exhibited six very fine Ewes, by Rev. H. M. Boardman of Gorham."

THE STUYVESANT PEAR TREE.

This old tree which still continues to grow and bear at the corner of Third avenue and Thirteenth-street, New-York city, is a curiosity in more than one particular. The writer first visited it in 1833, when the streets on which it now grows were comparatively country roads, and the adjacent land mostly open fields. It appeared then much as it does at the present time, but had a much larger and broader top, and of course bore heavier crops. The stone pavements which cover its roots, and the tall brick blocks which shade its stem and branches, must, of course, tend to diminish its vigor. When visited about the first of the present summer, the shoots forming the remaining portion of the top were found to be full of vigor, and still bearing a few pears. Some of the shoots had grown last season from two to three feet in length, and had then made about a foot in growth the present year—showing conclusively that there was no inherent decay from old age in the variety after the lapse of centuries, as claimed by those who adopt the theory of sorts running out by old age. The stem up to five feet, measured two feet eight inches in diameter, where a large dead branch had been sawed off some years ago. At eight feet high the tree formed two separate branches with distinct heads, one about twenty feet high, and the other thirty feet. These heads appear to be gradually lessening in size, from the successive dying of the shoots—either from not receiving enough nourishment through the old, hardened and decaying trunk, or by the *bad cultivation* which it now receives, or from blight—or all three combined. We understand that the tree bore nearly a barrel of pears a few years since. It is a late summer variety, quite good, and somewhat allied in character to the Summer Bon Chretien.

This tree was planted by old Gov. Stuyvesant when New-Amsterdam, now New-York, was held by the Dutch; but, on being driven out of the city by the "guessing, pumpkin-eating gentry," and their English allies, he retreated to his country residence at this place, and being brimful of wrath and cabbage, he cut down every English tree he could find on his grounds—consequently this could not have been an English variety, and it appears to be unknown



Stuyvesant Pear Tree, probably 250 years old. and undescribed in English works. As this occurrence took place some two hundred years ago, the tree must be now considerably more than two centuries old. The accompanying sketch was made on the spot a few weeks ago.

LOCALITY FOR PEACH ORCHARDS.

J. STOVER of Norwich, Canada West, who resides about 80 miles west of Niagara Falls, informs us that by the selection of proper sites he is enabled to secure good crops of peaches nearly every year, although that region has heretofore been generally regarded as unfavorable to this crop. His observations and experi-

ments are entirely in accordance with what we have frequently published on this subject, namely, that elevated spots of ground, and those that have a good natural drainage are the best for planting peach orchards. The country is somewhat rolling, and the tops of the ridges are much freer from frost than the adjacent valleys. The fact also that those ridges often have a gravelly subsoil, producing perfect natural drainage, renders them admirably fitted for that purpose. Soils which retain much moisture, as in other places, are liable to frost, and the crop frequently fails when grown upon them.

In all places where the surface of the country is rolling it will be found that the peach crop is far more certain on the ridges than in the hollows, except where the soil is springy or too wet; and some of our readers who have regarded this crop as unfitted to their localities may possibly succeed every year by selecting the more elevated sites.

[For the Country Gentleman and Cultivator.]

DESTROYING THE CURRANT WORM.

The use of White Hellebore has given general satisfaction this year to my neighbors, as a poison for the Currant worm. It is a cheap, light colored powder procured at the druggist's, and sprinkled thinly over the leaves by means of a dredging-box. A pepper-box is sometimes used, but it is too small. As soon as the worms eat a small portion of this powder on the leaves, they at once close their business and mouths, and wind up their trade and themselves. The application should be made after each rain which washes off the powder, so long as any insects remain. In addition to this remedy, or preceding its application, it is a good way to pass around with a tin-pan, and jar off into it as many worms as possible, and kill them at once. My gardener thinks this better than the Hellebore. The first day he obtained about two quarts of insects, by twenty minutes work. No remedy for this or any other insect, should be considered of any value, which does not kill them on the spot. V.

[For the Country Gentleman and Cultivator.]

REMOVING TREES.

MESSRS. EDITORS—It oftentimes happens in enlarging a fruit garden, or changing the order therein, that trees of considerable size have to be removed or cut down, and as I have had a little experience in such a case and resulted satisfactory, I will report it for the benefit of others similarly situated.

In enlarging and re-setting my fruit-yard I found it necessary to remove four fine standard pear trees, that had borne fruit some 4 or 5 years.

Wishing to remove them in the spring I covered a space around each tree with manure, large enough to take in all the roots, for the purpose of holding the frost in the ground covered, after the soil around was well thawed out.

In the spring I dug a trench around each tree close to the frozen soil, and deep enough to take in all the roots, and with a lever lifted the frozen mass and trees out of their beds and deposited them where I wished them to remain.

I trimmed them slightly after setting out, but it was not necessary, for I could not see that it retarded the growth in the least, and three of the trees were well loaded with fruit.

Springwater, N. Y.

D. B. WAITE.

[For the Country Gentleman and Cultivator.]

Crop Prospects in Northern Wisconsin.

MESSRS. TUCKER AND SON—It is fortunate our country is so large in area, and various in its productions as well as its climate, for were it not so, one little section, like a petty German principality, would often be deficient in necessities of comfortable existence, and consequently at the same time under the most humiliating obligations to other States, to say nothing of frontier police, and the immense cost of supporting ten to twenty separate fiscal and administrative systems instead of only one. Under the National Union arrangement, every State or province is benefitted by being a component part of one general system in nature, art, commerce, literature, and all those phases of life which necessitate and reciprocate exchange of resources from distant sections one with another; each with all, and all with any one in need. Here, for instance, is a drouth, or some cause of devastation this year; the next season similar agencies are in operation in another and distant part. Now we both need and receive succor from them; then they get assistance from us, or from some of the great reciprocity feeders of our great national mother—the mother of many flourishing and prosperous States. In Wisconsin for instance, we are now in imminent danger of coming to subsist on half rations—at least it is certain that this season will not give us more than about half crops, and I hear the same sort of report of the prospects in Minnesota. Our planting season was late, a large area of wheat and oats being put in since May 1st. In the middle of May we had very hot weather, for about ten days the mercury going up from 85° to 95°, most of the time, in the shade. This extreme heat, without rain, brought forward the first sown wheat rapidly, but at the same time dried up the ground so much that the last planting of wheat and oats could not get forward enough to shade the ground before the drouth became protracted and hurtful. The consequence is, we cannot have more than two-thirds of a crop of wheat, less in proportion of oats, and a light crop of corn. In many instances the earliest wheat is yet of good color, but more than half of the ground sown looks brown, the wheat not having grown at all for two weeks.

My wheat looks well, but it cost the mares fifty pounds of flesh apiece to get it in quick. Three-fourths of my corn is doing well, being planted on fall-plowed ground. In many instances corn, on spring-plowed ground, is not up. Apples and other fruit blossomed for a good half-crop, but a nip-frost, just as the trees were going out of blossom, killed half of them, and the drouth has finished them off completely. Peas, strawberries, and culinary vegetables in general, have gone the same way. Beans and potatoes, and these are not yet up for want of moisture, with slight exceptions, will comprise the vegetable resources left us for next season. The drouth has now continued for about five weeks with inconsiderable sprinkles, and a mere sprinkle having fallen last night, there is no present prospect of a good rain.

In addition to this, we have the locusts as thick as they were in Egypt—the seventeen-year locust or cicada—probably about one to every square yard; through all this part of the State, the ground is lite-

rally and generally perforated with their holes, and they crowd trees, bushes, weeds, peas, fences, here, yonder, and everywhere. What the extent of positive destruction by them may be, cannot yet be known.

The conclusion is, the northwest will have but a very scant surplus of produce to sell next fall, and our whole consumption of fruit—and this touches me very sharply—will have to be derived from outside the lines and limits of this State and other large sections, that with a good season would have produced much towards supplying wants of the inhabitants thereof. War, drouth, locust, half crops, and afterwards we must hope pleasant weather, peaceful progress, and all the other auxiliaries that must compose “the good time coming.”

J. W. CLARKE.

Green Lake Co., Wisconsin, June 9, 1864.

[For the Country Gentleman and Cultivator.]

GROWING CORN FOR FODDER.

LUTHER TUCKER & SON—As the subject of raising corn for fodder, as well as for corn, has been the subject of discussion for a time, I thought I would give the result of my experiment the last season for your disposal.

I drew 17 loads of half-rotted barnyard manure on 150 rods of fair corn land—plowed it under immediately, and prepared the ground for planting the 26th day of May. The following day I marked it out one way 2 feet apart, and dropped 2 to 3 kernels in a place as near every foot as I could guess, covered with a harrow, and rolled. Owing to the drouth in June the greater part of the corn did not show itself above ground till after the 20th of June. I went through the corn once with the cultivator by taking out the back teeth, and hoed it out once.

From this piece I harvested 90 bushels of ears of corn, and 270 bundles of as fine corn-fodder as I ever saw. This spring I have put in my corn by marking the ground one way 3 feet apart, and dropping it from 1 foot to 18 inches apart, and covered with a harrow and roller, the result of which I will give if considered worthy of publication.

Seneca Co., N. Y., June 13, 1864.

E. S. BARTLETT.

Hilling Indian Corn.—A correspondent of the Germantown Telegraph, speaking of the practice of hilling corn, says: “Constructing large, conical hills, on land which is light and dry, must inevitably tend to increase the effects of drouth, inasmuch as it exposes more surface to the atmosphere, and consequently increases aërication at times when all the moisture contained in the soil is required for the support and sustenance of the plants. When rain falls, the conical hill conducts the water from the roots to the centre of space between the rows and hills, very little of the fluid being retained about the plants, or within range of the small roots by which the *pabulum* is taken up by the growing plants, and without which they would immediately languish and decay. On light soils hilling is always disadvantageous to the crop. Every fresh stratum of earth placed over the roots causes a protrusion of a new set of laterals, to the detriment of those previously formed. This exhausts the energy of the plant, without increasing, in any great degree, its powers of appropriating food from the surrounding soil, as the first-formed roots cease to grow as soon as those caused by the deposition of new soil are developed, and in a short time will be found to have lost their vitality and become mere worthless appendages.

LETTER FROM PRUSSIA.

The Wire-Worm—Its Depredations on Grass and Grained Lands—Remedy suggested—Treating by Sheep—Harrowing—Expedient—Killing with a Serrated Roller—Liquid Manure Beneficial.

MUNSTER, PRUSSIA, March 24, 1864.

Messrs. Editors.—In the Co. GENT. of March 24 I find an article on the above subject, the author of which wishes to be informed how to destroy wire-worms. Now these little enemies are frequently doing great damage also on our continent, but we have discovered means to kill them, and are applying them with complete success. I will briefly state my experience.

Your correspondent is quite right in saying that nothing can be applied to the land sufficiently powerful to destroy them. You cannot poison them, but you can make the land unfit for a wire worm to live in it.

If you observe attentively a field in which the wire worm is beginning his depredations, you will see that the latter commences where the ground is loosest, and that they spread from there slowly to all sides. If perchance two furrows have been thrown together in plowing, so forming a sort of ridge, the worm invariably commences to eat along this ridge, where the ground is drier and more loose than on the rest of the field. We see this very plainly here, where all fields are thrown together into lands or ridges, which are from 1 to 3 mole wide, and whose ridge sometimes is 2 to 4 feet higher than the furrow. This is by no means a commendable practice, and is more and more disappearing, but it still exists, and where it does so, there the wire worm first destroys the crops along the ridges and gradually descends towards the furrows. Another experience is, that the wire worm is particularly dangerous to such crops as are protected by clover, the rotting remains of the clover keeping the soil loose and dry. Even more! We have whole tracts of land which formerly were wet and stiff, but of late have quite changed their qualities by being underdrained. Now on such lands the wire worm was entirely unknown before the drainage; but as soon as the drains were showing their effects the wire worm made his appearance, and soon became a great plague.

Now to the remedy. *Destroy the looseness of your land*, and you will not be troubled by the wire worm. We have taken a flock of sheep and driven them up and down on a field sown previously with oats, and there never appeared a worm as far as the sheep had come, though the rest of the field had to suffer hard. "The sheep has a golden foot," says an old adage; their small feet are the best roller known, but it is an expensive job; our shepherds hate it; it is no advantage to the flock, and 400 sheep can do only a small day's work. So we employ other means.

Five years ago we used to think that thorough harrowing was the only means to prevent depredations by the wire worm. I have frequently heard some of our best and most successful farmers say that the fate of the crop depended on the harrow. I have seen fields harrowed twelve and even sixteen times after the throwing on of the seed. My old chief had a walking stick with a sharp point, and he was all day walking over the field to try whether he could find a loose spot. He would push his stick into the ground, and as long as a hollow

place was to be discovered the teams had to keep on. "The horses' hoofs must tramp it hard," he would say, when our patience sometimes became exhausted. Frequently when I thought of sending the teams home for the night, he would come out with his stick and the third horses had to begin anew, and many a field was so treated hours after the moon had risen. I say this because I know that in America, especially in the west, little attention is being paid to harrowing. You consider mostly the job done when the seed has been covered. I had been engaged in farming for nine years in the States, and when in 1859 I tried my hand at it here I at first shook my head at so much harrowing, and thought it an unnecessary expense. I know better now. Thorough harrowing is the first rule of good tillage; it is the best remedy against the wire worm. But we have introduced better implements of late; the harrow alone does the work too slow, and not good enough; we now employ iron rollers made in sections similar to Cresskill's chod breaker. We roll the land before and after seeding, and one rolling often has more effect than four rounds by the harrow; the roller cannot be too heavy; it packs the ground and destroys the haunts of the worm. Smooth rollers could not do this; they merely pulverize and press the surface and are often dangerous to use—if the surface is reduced to powder, a rain will take it into a crust. We want the land packed at the bottom of the furrow—open on the surface. I am satisfied that if we could, by steam power, drag a roller of 10,000 pounds over the field, this would pay better than to use one of 600 pounds. Smooth rollers, however, I regard with distrust.

Sometimes at seeding time the land will be so dry that even by the aid of the roller it cannot be packed. In this case we roll the land after the seed has come up. Oats will bear such an operation very well when the young shoots are 2 to 4 inches long; winter wheat will bear it in the spring, though not with a smooth roller. It happens, that owing to dry weather or other circumstances the field remains too loose and the worm begins his work of destruction. In this case we use, with best success, liquid manure. I have drawn such liquid manure upon an oat-field in May where the wire worm was committing the greatest depredations. Of course the wheels of the wagon injured the appearance of the field, which looked like a garden before; but they did not injure the crop. The tracks of the wheels soon disappeared under the reviving haulm; the worm was completely routed, and we harvested a tolerable crop of oats. The worm cannot bear the smell of liquid manure from the tanks, but the latter must be applied on growing crops to have effect. When applied before seeding, it loses its smell too soon. I used to pump water into the tank and stir up the old settlings (the tank being very large) to make the stuff last, so that I have had nearly 100 loads (for four oxen each) drawn in a season, and saved a good many acres of oats. The same was done on a rye-field in the fall, though at that season more caution is required.

The above are facts proved by experience. Let me add that sometimes after a cavalry manœuvre on seeded fields, the whole crop seemed destroyed by the horses' hoofs, and consequently was taxed and the owner indemnified; but afterwards the crop revived and gave a highly remunerative harvest. We must loosen the ground by plowing, but we cannot pack it too much afterwards for crops of small grain, barley excepted, provided we keep the surface from baking.

L.

APHIS ON APPLE-TREE BUDS.

The fore part of the present month J. J. THOMAS sent me some opening flower-buds of the apple tree, thronged with young plant lice, nestling close down among the pubescence. He finds these insects, 100,000 to 1,000,000, on every apple tree in his vicinity, every expanding bud being crowded with them. And I find the same aphid common though less excessively numerous, on the opening buds of the apple trees in my own neighborhood. They are the young of the common aphid which infests the leaves of the apple trees during the summer—the *Aphis Mali*—of which I gave an account in the COUNTRY GENTLEMAN, July, 1855. These insects end their annual career late in the autumn, by depositing their eggs, crowding there-with all the crevices under and between the scales of the bark of the apple trees, as full as they can hold. Most of these eggs are swept away by the storms of winter, and perish. Those which remain hatch with the first warm days of the returning spring, just as the flower buds are beginning to open. Thus the young plant lice all become crowded upon these buds, nourishing themselves thereon until the leaves become sufficiently developed to sustain them. A. FITCH.

Management of Restive Horses.

MESSRS. EDS.—I saw in the Co. GENT. a few weeks since an inquiry in regard to the best mode of managing a restive horse. I don't think, from the description, the mare spoken of should be called baulky, although she might easily be made so. I have looked for an answer to it, but as there has been nothing practical offered, I will give you my experience in a similar case, and if it is of any value I shall be glad to have your readers have the benefit of it. I have a valuable mare of very high spirits, similar in disposition to the one described by your correspondent. Last fall she began to be restive about starting, so much so that it was dangerous to drive her single. She was impatient to start, and if held in would rear and pitch about, sometimes throwing herself down. Finding the matter becoming serious, I undertook to cure her, and succeeded perfectly. The "modus operandi" is this:

Let the driver have the entire charge of her, and take pains, by gentle usage and kindness to be on good terms with her. When she is to be driven let him harness her himself, talking and patting her during the process. When all ready, go to her head and stand, without holding her, if possible, till everything is in the buggy but yourself. Now, holding the lines, step back a pace or two. She will probably start; if she does, pull her up *without* a jerk, speaking kindly to her as soon as she is still. If she backs up or rears, hold her by the head, but don't strike her. Repeat the process till she is mad enough to stand still, and take that time to get in. Now if you order her to start, she will probably make more trouble; wait therefore till she is ready—you can tell by watching her ears—then give her the word and let her go.

By pursuing this plan a few weeks a radical cure may be effected; this at least is my experience. One very important point is never on any account use any severity with a horse of that disposition; it can never do any good, and is almost sure to do hurt. It should

be remembered that while it is never necessary to give up to a horse, it is very often advisable to humor them. X. Y. Z.

MANAGEMENT OF DAIRY COWS.

MESSRS. EDITORS—I propose to give some items of dairy management, which may be of service to that class of your readers who are engaged in that branch of business, which is extensively pursued in large portions of this State.

Winter Management.—Cows should be fed through the winter with what hay they will eat, and well cared for by being housed nights and stormy days.

Spring Management.—I prefer to keep my cows off from the meadows entirely, and from the pastures until grass gets a good start.

When cows come to milking, and before grass is up sufficiently, I give them a good supply of good hay, made of fine grass, cured as green as possible, and cut while in blossom. This will make nice yellow butter. If any of my hay gets injured by rain, I keep it separate for earlier feeding.

If grain or root crops cannot be fed, I sprinkle the hay with water tinged with salt and bran or meal.

It is of much consequence to dairymen to have their cows come to milking at the right time in the spring. A dairymen told me a year ago, that if they were put up in the stable immediately after copulation occurs, for about twelve hours till they become quiet, they would not fail the first time. I followed his advice, and find it to be so.

If any of my cows kick very badly, I prefer to strap up the fore leg around the knee, and put a pin through the under side to hold the strap, or to put a rope around the body, back of the fore legs, and wrench it up with a stick. I prefer this for a few days, instead of clubs and whips, till they become manageable.

Feeding Calves.—The way I learn calves to drink: I take the head between my knees and back him into a corner, holding the pail in my left hand and his nose into the milk-pail with the right hand. While help is scarce I can learn him alone without it.

For skinning calves, I think I shall use a "Deacon skinner," like the one described in the last number of THE CULTIVATOR, for all future time for that purpose.

Triangle, Broome Co., N. Y.

C. B.

RAISING CHICKENS.

My man has again had his usual good luck in raising chickens, as follows:

2	hens, each	16	chickens,	.....	32
1	do.	17	do.	.....	17
2	do.	15	do.	.....	30
1	do.	19	do.	.....	19
1	do.	14	do.	.....	14
					112

Thus seven hens produced one hundred and twelve chickens, and these were the only hens set this season; all were alive yesterday, and healthy.

L. B. B.

New-York, April 25.

TO PREVENT GAPES IN CHICKENS.

EDS. Co. GENT.—It may of use to many of your readers at this season of the year, to know that chickens can be raised without having the gapes, by mixing all their food with urine.

Y. T.

New-Haven, May 3, 1864.

Beet Root Sugar in France.—According to an official return, the quantity of beet root sugar manufactured from the beginning of the "campaign" to the end of February, was 105,513 tons, which was 58,725 tons less than in the same period last year. The quantity in entrepot at the end of February was 35,248 tons. The number of manufactories was 306.

CLOVER AS A SOURCE OF FERTILITY.

This subject was quite fully treated by a correspondent in THE CULTIVATOR for June. Although the evidence then given of the value of the clover crop when turned in as a fertilizer, was conclusive enough, still it will not be amiss to add the weight of other authority and later investigation.

At a meeting held in the Rooms of the Royal Agricultural Society of England, in Hanover Square, on May 11, Prof. Voelcker read a Lecture on the Atmospheric Nutrition of Plants, in which he detailed at length the double action of the air upon growing vegetation—first, as affording food through the leaves, and, in the second place, as supplying nutriment to the roots themselves. The latter, of course, only come into contact with the air *contained in the soil*, and Dr. V.'s remarks impress us anew with the importance of its proper aeration. He considered "the indirect part played by the atmosphere so great in its effect, that we might say positively that all soils that were *not penetrated by air were unproductive*, no matter how much food there might be otherwise contained in them. Cases were constantly brought under his notice of soils sent to him for examination which were characterised as unproductive, but which turned out to contain an abundance of all the mineral constituents required for the growth of plants, and which required only to be thoroughly penetrated by the air in order to furnish an unlimited quantity of food."

To understand more thoroughly the correctness of this position, let us briefly trace Dr. Voelcker's account of

The Air as a Source of Plant Food.

It is calculated that three-fourths of all vegetable growth is derived from carbon. The part of the plant above the ground is crowned with a large amount of foliage, the surface of which is constantly drawing in the carbonic acid of the atmosphere. The action of light decomposes the carbonic acid in the leaves, so that they at once assimilate the carbon for the use of the plant, manufacturing it into starch, gum, sugar, and other combinations found in all vegetable productions, and throwing off at the same time the oxygen, thus restoring that balance which would otherwise be continually disturbed in the removal of the oxygen by animals. Now the amount of carbonic acid contained in the air, is small, only 4 or 5 parts in 10,000; yet "when we consider the enormous volume of the atmosphere—when we consider that plants are provided with such a beautiful apparatus for absorbing the carbonic acid diffused through the atmosphere, which is constantly wafted in all directions, and driven towards the leaves of the plants—when we further consider that there is no other source from whence plants can derive their carbon, and make the calculation of the amount of carbon contained in the enormous bulk of the atmosphere—we are forced to the conclusion that the quantity of carbonic acid in the atmosphere is sufficient for most plants."

But although, perhaps, strictly sufficient for their wants, still there can be no doubt that plants also avail themselves, some particular crops especially, of the carbonic acid present in the air which permeates the soil, and renders it available for their roots. Bous-singault shows that this underground atmosphere, if

we may so call it, contains 40 to 50 times as large a proportion of carbonic acid as the outer air; and that, after a rain, this proportion is often farther increased, sometimes as much as four or five-fold, proving "that the wetting of organic matter and the rapid decomposition which through contact with the porous earth takes place in organic matter, lead to the destruction of the humus and the formation of large quantities of carbonic acid." As an illustration, the Professor alluded to the very rapid growth of young turnips after a good shower of rain if the land had been well dunged, the rain promoting the rapid production of carbonic acid in the soil. They looked in vain for this result in soils which had not been properly cultivated.

But carbonic acid is not the only source of plant nutriment afforded by the atmosphere. Its ammonia is of at least equal importance to vegetation, and is not only supplied through the leaves, but the air has also a great effect upon the organic matters in the soil, in producing nitrates for the consumption of the roots. An excess of organic matter, in the shape of decaying roots or leaves, is of great injury on retentive soils not permeated by the air. Hence such soils may be improved by "paring and burning," which, although apparently a wasteful process, is in reality doing by fire what it would undoubtedly be better if we could accomplish by means of the oxygen of the air, were not the soil so imperfectly aerated and so impervious to it.

As farther showing the importance of the aeration of the ground, Dr. V. stated clay "soils in many cases contained an abundant store of mineral food, which was as essential as atmospheric food to the growth of plants; but in many cases it occurred in a locked-up condition, in which it was of little or no avail to the growing plants, and it was only when the air thoroughly penetrated the soil, that it became available. It was by the introduction of atmospheric oxygen and carbonic acid, that many mineral compounds belonging to the double silicates of alumina and alkaline, of ammonia and lime were gradually decomposed. In consequence of this remarkable composition, the surface of the soil becomes more porous and powdery, and a stiff clay soil was, by proper aeration, reduced into fine earth, and at the same time there were produced the food so much wanted for the growth of the plant, and that condition which enabled the plant to absorb more abundantly atmospheric food; for the more porous the soil was, the more readily did it absorb ammonia and carbonic acid from the atmosphere."

— To go back now to the point from which we started, we may perceive some of the reasons why a clover crop turned in, produces so great a fertilizing effect. Its roots penetrate the soil in every direction, and not only open it for the passage of the air, as they decay, but also supply nitrates for the succeeding crop, and promote the increased availability of plant-food of other kinds. For this reason Dr. V. had made an experiment some years ago "with the view of ascertaining how much nitrogen was present after the clover crop had been removed, and he had ascertained that it was equivalent to rather more than the amount of nitrogen present in 8 cwt. of Peruvian guano—that was taking 1 acre. It could not be maintained that the nitrogen, to the whole extent he had stated, would be available in the shape of nitric acid; yet, if only one-half be-

came so available. the reason would at once be seen why clover was such an excellent preparation for wheat, and why a good crop of clover was almost invariably followed by an abundant crop of grain." In answer to a subsequent inquiry, he remarked: "Good Peruvian guano contains from 14 to 15 pounds of nitrogen to the cwt. I mentioned only one example of the quantity of nitrogen in the roots and other vegetable remains, that are left in the soil; but it of course varies. I am at present engaged in following up this investigation. One of the matters for investigation in the present year is an inquiry into the growth of clover, and I shall follow up that inquiry by ascertaining how far it is useful as a preparation for the wheat crop."

How to get the most Benefit from Clover.

The Professor said that after growing a good crop of clover, immediate steps should be taken to work the soil, and the better the soil was worked by proper machinery, the sooner the clover ley was broken up, the sooner the atmospheric air entered the soil, the more rapidly were the nitrogenous constituents of the root destroyed, and the more abundant were the nitrates found in the soil. He never examined soil that had been well penetrated by air, in which large quantities of nitrates were not invariably present.

A gentleman present remarked that in growing and managing the clover crop, harvesting, and feeding off, as much attention as possible should be paid to *increasing the roots*. "If you work off the heads only, you do not injure the stems, the plant is still growing, and a large amount of root is formed; but, if you feed off the clover, you more or less kill the plant, and the root is not formed. This, in considering the effect of the clover crop upon wheat, would be of very great value."

Dr. V. responded that he had already given some attention to this point, and that "after two years' clover crop, leaving the first year's crop standing for seed, more nitrogen was actually obtained than when it was immediately fed off. The explanation is that the roots develop themselves much more perfectly when the clover plant is allowed to grow without being checked, as it would be by the nibbling tooth of the sheep." He proposed to make farther experiments, with the view of ascertaining the amount of produce, and what was left in the ground after treating a piece of clover in various ways, and he hoped to have the co-operation of members of the Society in case it should prove necessary to confirm the results of his own investigations under different circumstances and in other localities.

SURPLUS BOXES.

We often hear bee-keepers remark: "I don't see why my bees do not work in the cap-boxes. The outside of the hive is black with bees. All idle; yet they will not do a thing in the cap. How do you manage to get your bees to work in the boxes?"

Several things are necessary in order to have bees work to advantage in storing honey in surplus receptacles. 1st. They should be convenient of access. Tall hives, with only one small hole for the bees to pass into the cap, are not the thing. When a hive is from eighteen to twenty-four inches in height in the main chamber, we call it tall. Persons who use low hives, from ten to fifteen inches high, have much better success—other things being equal—in obtaining virgin honey.

The hives should not only be low, but should have abundant openings, or orifices, in their tops, leading to the cap-boxes. If there are holes between every range of combs, all the better. A relative who had kept bees for many years, told me he had never succeeded in getting but one top box filled. On examining his hives, I found them from eighteen to twenty inches high, and only one little three-fourth inch hole, entering into the cap-box which turned down on top of the hive. The reader will readily perceive why he failed. 2d. The caps, not too large, should be snugly made, and fitted closely to the hive, and carefully guarded from the light and sudden changes of temperature. If the cracks are open, they can be stopped with a mixture of rosin and bees-wax, three parts of the former to one of the latter. This will save the bees much labor in bringing propolis. A high temperature is necessary for comb building, which can rarely be attained in open boxes, situated at a distance from the main breeding chamber. 3d. Bees, as a general rule, will commence much earlier in the boxes if a few pieces of combs are cemented to the top of the box. They can be fastened by the mixture of melted rosin and beeswax. If small pieces, of only a few cells, are used, they will answer the purpose admirably. But the larger they are, of course, the better. We have had small boxes nearly half filled in forty-eight hours. They were fitted with new combs, cemented to their places, and placed on the hives in the height of the honey harvest. The bees lost no time, but commenced storing honey immediately in the empty combs thus furnished. 4th. The main or breeding chamber of the hive should only be large enough to furnish the queen with all the room she needs for laying, and hold enough stores to winter the bees. If the body of the hive is large, the bees will always work there in preference to going into detached boxes to store their surplus. In latitude forty-three degrees, about two thousand cubic inches is the right capacity. A hive 12 by 12 by 14 inches—2016 cubic inches; or one 14 by 14 by 10—1960 cubic inches. Either size is near enough for practical purposes. Many bee-keepers lose by large hives. What honey they get is taken from the body of the hive, and is more or less mixed with bee-bread, young bees, and soiled by constant passage of the bees over the combs. Honey stored in clean white combs, in surplus boxes, brings a much higher price in the market than a conglomeration of broken combs, young bees and bee-bread. 5th. Want of sufficient ventilation and protection from the hot sun, in very warm weather, sometimes prevents bees from working in surplus honey receptacles. The hive should be kept shaded and ventilated in hot weather, so that there is no danger of melting the combs. If the outside of the hive is "black with bees," it is a sign that there is a want of room, or it is inconvenient of access, or that the hive is deficient in ventilation. Of course, no one should expect or wish his bees to work in surplus receptacles until they have first provided for their own wants.

In favorable seasons, you may expect good stocks to store surplus, if their hives are low, not too large, furnish free access to the boxes, boxes made tight, pieces of combs secured in the top, and well protected against sudden changes of temperature. At least, such has been our experience.

L. L. FAIRCHILD.

Rolling Prairie, Wis., 1864.

Lusus Naturæ.—A correspondent of the Maine Farmer says that Sylvanus Damon of Buckfield, in that State, "has a two-year old heifer which dropped a calf April 2d, which was alive and well and perfect in every respect except being entirely without legs or signs of any. The supposed cause is that the heifer, about eight months previous, was much frightened at a dog rolling over on the ground. The body, in the act of rolling, being only visible to her, constituted a mental impression sufficiently strong to produce the result."

No. 34.—THE BUFFALO TREE-HOPPER.

EDWARD MERRIT of Poughkeepsie last year sent to the COUNTRY GENTLEMAN slips of Antwerp raspberry stalks, each slip showing a row of holes perforated in it, and desiring to know the insect which occasioned this mischief. On receiving them I felt so confident that I had quite lately given a full account of this insect and its operations in the COUNTRY GENTLEMAN, that this communication was laid aside, and soon passed from my recollection. Recently he sends us slips of the grapevine showing the same perforations, and renewing his previous request; and now, on coming to examine, I find that it was not to the COUNTRY GENTLEMAN, but the American Agriculturist that I communicated an article upon this subject, which was published in that periodical June, 1862. This will explain to Mr. M. why his first remittance came to be passed over unanswered. And in now writing again upon the same subject I shall be able to add but little to what is contained in my previous account.

An appearance so curiously artistic that it attracts the particular notice of the person whose eye happens to perceive it, is frequently to be seen in the winter and early spring, upon some of the leafless stalks of the raspberry, and more rarely upon the twigs of the apple, cherry, and other trees and shrubs. A row of small holes, of the size made in paper by puncturing it with a coarse pin or needle, is observed to be bored at slight but regular distances from each other, in a straight line. The row extends lengthwise of the twig, and is from one-half to three inches long, there being about twenty-six holes to an inch. It is usually in twigs and stalks which are slightly less than a quarter of an inch in thickness that these rows of holes occur, and frequently there are two or more rows upon the same twig. While the holes are plain and distinct in some kinds of trees, in others they are obscure, making wounds which cause the bark to swell into a rough cankered-like scar, with a deep crack or fissure along its middle, in which crack the holes are more or less perceptible. On splitting the twig, it is seen that these holes are bored, or rather pierced, inward into and almost through the soft central pith, in a slanting direction, and that each hole is somewhat bent or curved, and is occupied by the egg of an insect. The eggs are shining, yellowish white, cylindrical with rounded ends, and four times as long as thick—their length being a little more than the tenth of an inch, and exactly filling the inner portion of the holes for about two-thirds of their length. And now what insect is it that makes these wounds? Several years ago I first noticed these wounds in some willow twigs, but the holes were empty, the insects having hatched and left them. In the spring of 1858 the twigs of apple trees at Akron, Ohio, were very much injured in some orchards by wounds of the same kind. The malady excited the attention of H. W. HOWE, Counsellor at Law, of that place, who sent me specimens of the wounded twigs, and a correspondence upon this subject thereupon took place between us. On learning how much of a novelty these wounds were, and the insect making them was unknown, he



devoted particular attention to this subject, and at length was so fortunate as to detect the culprit in the very act of piercing these holes, and specimens of it were thereupon sent to me. It is thus to Mr. HOWE that we are indebted for knowing what insect it is which causes these wounds, and the manner in which it makes them.

The insect is so common through the Northern States and Canada, and has such a peculiar form that it has at sometime been noticed probably by every person of observing habits. It begins to be seen soon after the middle of July, and remains until the end of the season. It is from three to four-tenths of an inch long, of



a light grass green color, freckled rather faintly with whitish dots, and is shaped like a beech nut, with two short, sharp pointed processes, like horns, jutting outward in front, one on each side, giving its forward end some resemblance to that of a bull or buffalo. Hence it has received the name of the BUFFALO TREE-HOPPER, or *Ceresa*

bubalus, as it was scientifically named originally by Fabricius. It pertains to the Homopterous division of the order Hemiptera, and to the family Membracidae. This insect may frequently be seen standing on the small limbs of the apple tree, the locust, and other trees in our orchards and yards, with its head towards the base of the limb. It remains perfectly motionless and quiescent; but if the finger approaches it, with a sudden strong spring it darts away with such velocity that the eye is seldom able to follow it, or even perceive the direction in which it has thrown itself.

We have in our country a few other insects of this same genus *Ceresa*, all of them similar to the above named species in their size and shape, and no doubt wounding shrubs and trees in the same manner. And it may be some of these by which the rows of holes have been made in some of the situations in which they have been observed—for it is only upon the apple tree that the Buffalo tree-hopper has been actually seen in the act of depositing its eggs. The rows of holes appear to be more common in the stalks of raspberries than in any other shrub or tree. I find them particularly in the wild black raspberry, or thimble berry, as it is sometimes called, (*Rubus occidentalis*) and frequently also in the red raspberry (*R. strigosus*), and they will no doubt be noticed also in the high blackberry (*R. villosus*). Correspondents in different places have mentioned to me their occurrence in the garden raspberry (*R. Idæus*). And where the elder (*Sambucus Canadensis*) is growing among raspberry briars in neglected fields, or by the side of old fences, I have frequently noticed these rows of holes in its stalks also. This fact is the more worthy of remark, the notion having been so widely prevalent that this shrub was peculiarly obnoxious and repulsive to insects. And further, as has already been mentioned, these wounds have also been observed in the apple, cherry and willow, and in grapevines, and are sometimes so numerous as to be injurious by killing, as they frequently do, the portion of the twig which is above them.

In an elder stalk I have seen a row of these holes $3\frac{1}{4}$ inches in length, a joint in the stalk then interrupting it for a distance of nearly a half inch to where

another row, $1\frac{1}{2}$ inches long was placed in the same line, the upper row containing eighty-one punctures, the lower one thirty-two. The whole was probably the work of one insect, and done at one continuous operation. It hence appears that each female deposits about 100 eggs.

The *piercer, lancet or ovipositor*—the instrument with which the insect perforates these holes—closes into its sheath much as the blade of a pocket knife does into its handle. It is plainly to be seen thus closed into a groove, which is on the underside of the body at its hind part. To perforate a hole this piercer, as Mr. Howe informs me, is held obliquely downward and forward, or like a knife-blade a quarter opened. Being in this position, and with its point pressed against the bark, it is by a forward movement of its body that the insect draws or thrusts it downward through the bark and soft wood, and into the pith. An egg, no doubt, is then passed into the perforation, and the implement is then withdrawn. The wounds which are thus made are scarcely perceptible at first, but become more and more conspicuous with age. It was the last of September that Mr. Howe discovered the insect at this work, and some of the wounds then on the apple twigs, he judged from their appearance, had been made a month earlier.

The eggs remain in the twigs through the winter and hatch the following season, probably in the month of June, as I meet with some of them in raspberry stalks, unhatched at the date of this writing, May 25th. They do not produce worms, but small active insects, which have some resemblance to the parents in their shape, though they are destitute of wings, and of the hard, glossy shell-like covering which they acquire when they become fully grown. They wander away from their birth-place as soon as they come out from the eggs.

These tree-hoppers, both in their young and in their full grown states, nourish themselves by puncturing and sucking the juices of the leaves or of the tender new bark of the twigs. In this way they are pernicious to the vegetation on which they occur, as well as by wounding it to deposit their eggs. Therefore, in seasons when they are noticed as being so common in the orchard or garden as to excite fears of injury from them, it may be well to frequently shake or jar the trees or shrubs to which they resort, and strike upon the foliage here and there with a stick, to frighten off these insects—for I think few of them will remain in situations where they find they are liable to be thus disturbed, but will fly away to some of the wild vegetation of the fields and forests, which appears to accommodate them as perfectly as that which we cultivate.

ASA FITCH.

Effect of the Turnip Crop on the Soil.

MESSRS. EDITORS—It is somewhat singular how many and different opinions prevail among farmers in relation to the effect of cultivating or raising different crops on the soil. Among the different crops that are raised there is perhaps as much diversity of opinion in relation to the effect of the turnip crop as any one. Since I commenced raising turnips I have frequently heard it said that the turnip would poison the land, that other crops would not do well after it, and that

after raising it a few years the turnip itself would not do well on the same *farm* on which it had been raised. Now in my own experience I have proved all these assertions, as well as many others, to be entirely without foundation, and I have no doubt that in most of the instances in which crops that succeeded a crop of turnips have failed, the failure was to be attributed to other causes rather than the turnip.

I believe that it is admitted at the present time that one of the fundamental principles of agriculture is, that those crops which have the smallest and fewest leaves, with the largest number of roots, draw the most of their nourishment from the soil, and but little from the atmosphere, and consequently they exhaust the soil on which they grow much more than the opposite class of plants which have many and large leaves, with but few and small roots, which are supposed to obtain a much larger proportion of their food from the atmosphere, and less from the soil. If this principle is a correct one, then the turnip must be one of the least exhaustive crops to the soil that is raised. Whether other cultivated crops will do as well after turnips as before I cannot say, as my turnip crop is the last cultivated crop I put on my land before seeding down to grass. I have raised turnips two years in succession on the same land with good success. After the turnip crop I sow spring grain and seed down to grass. I have sown rye, oats and barley, and all of these crops have succeeded well, and I have never failed of getting a good catch of grass, and good crops of it, for several successive years after it, as good as I have ever obtained after any other crop. Whether the turnip will fail to do well, or grow on the same farm after a series of years, my experience of more than twenty years has failed to prove. It rather goes to *disprove* it, as my last crop was equal in every respect to any crop I have ever raised. It seems to me that the increasing and successful cultivation which this crop is receiving in this country and in Canada, and the long and successful experience which it has had in England, are sufficient to set at rest all the objections which have been raised against this crop, and to commend it to the favorable consideration of the farmers of this country.

Setting aside the depredations of insects, and the effects of weather, which no farmer can avoid, I think that most of the failures in raising this crop have arisen from the selection of unsuitable soil, the want of sufficient manure, and the lack of careful and thorough cultivation, and under these unfavorable circumstances no one need to expect to raise good crops of any kind. While, on the other hand, if the same judgment, care and skill is used in the cultivation of this crop that is used in the cultivation of other crops, there can be no reason why the same degree of success cannot be attained as with other crops. The turnip requires a dry mellow soil, an abundant supply of manure, with clean and careful cultivation, and with these requisites supplied, good crops can be relied on, and in proportion as these things are disregarded, so will the crop be likely to fail in quantity and quality.

Wilmington, Vt.

C. T. ALVORD.

DEVONS.—JAMES SWARTZ, Esq., of Hoffman's Ferry, has just purchased from the herd of Capt. JOSEPH HILTON of New-Scotland, the fine yearling Devon bull Prince of Wales, out of Moss Rose, 904, by Empire, 424.

STACKING HAY.

Stacking in the open field cannot be recommended. Ample barns should always be provided. Yet temporary necessity may often require stacking. When resorted to, it should be done well; the stacks built even

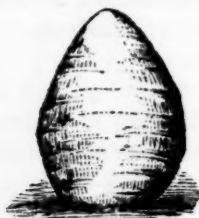


Fig. 1.
Evenly built stack—the horizontal lines showing the rounded surface of the layers.



Fig. 2.
Unevenly built stack—the horizontal lines showing the uneven settling of the layers.

and with symmetrical form; the hay should be pitched on from different sides to preserve upright and even settling; for when a stack settles to one side, it necessarily exposes the upper side to rain, and often to the loss of a large portion of the stack. Good stackers repeatedly and regularly pass around the structure, and place the hay in uniform forkfuls in regular and circular layers. The centre is always rounded the highest. In a well built stack, the fibres at the outside falling downwards, prevent any rains from passing in but a few inches; one laid up badly may allow the water to enter a foot or more.—*Tucker's Annual Register.*

Sheep-Show and Shearing in Cayuga County.

On the 8th June, the Cayuga County Sheep-Show and Shearing passed off at Scipio Center, on the premises of Isaac Akin, who had interested himself in making it convenient for the coming festival. The day being pleasant, it was held in his orchard, where the sheep presented, were well arranged. Our anticipations were fully realized in witnessing a large number of farmers interested in wool-growing and sheep-husbandry, not only from our own, but adjoining counties.

At 12 o'clock the sheep were all entered, at which time a repast was served up by Mr. C. Smith at the Central Hotel, to about 200 persons—after that commenced the operations of the different committees in weighing and examining the sheep presented. It being the first undertaking of this association, many were somewhat delicate in bringing in and presenting their sheep, owing not only to their being shorn at later dates last year, but the inclement winter, together with the hay crop secured last season, operated very much against this enterprise. Still there was a good number represented worthy of praise, and some, notwithstanding these circumstances, entered the ring for weighing and shearing.

Aside from those presented for shearing, were many extra rams one year old and older. One ram, presented by G. S. Center, South Butler, Wayne Co., and entered in the two-year old class, attracted much attention, and drew many *singular expressions* from the people—also some extra ewes and ewe lambs presented by L. Colvin, E. Lyon, J. Niblo, P. L. Atwood, and H. Allen. The whole number of entries for shearing was sixteen.

We give below the figures of those shorn, and re-

gret much that any of the committees were prevented from giving in their reports. Only the first class reported, which was on rams, three years old and over, which were in agreement with the rules of the Society on weight of carcass and fleece, all other points being equal:

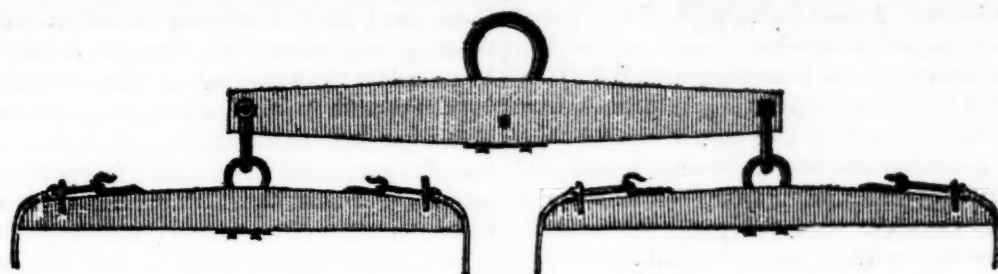
FIRST CLASS RAMS, Weight Unshorn.		Weight Fleece.
1. A. Greenfield,....	123 lbs. 10 ozs.	Moravia, .. 14 lbs. 12 ozs.
2. D. C. Gould,.....	103 lbs.	Scipio, 10 lbs. 5 ozs.
3. do.	121 lbs.	do. 12 lbs. 8 ozs.
4. H. Slocum,.....	141½ lbs.	do. 16 lbs. 11 ozs.
5. H. Allen,.....	93 lbs.	Venice, ... 13 lbs. 8 ozs.
2D CLASS RAMS, two years old:		Wayne Co., 23 lbs. 9 ozs.
1. G. S. Center,	137 lbs.	11 lbs. 4 ozs.
2. H. Allen,	76 lbs.	
3D CLASS RAMS, one year old:		Venice, ... 12 lbs. 3 ozs.
1. P. L. Atwood, ...	100 lbs.	do. ... 11 lbs. 6 ozs.
2. S. Thompson,....	89 lbs.	do. ... 13 lbs. 7 ozs.
3. do.	106½ lbs.	11½ lbs.
4. P. Davis,	79 lbs.	Washed, 8½ lbs.
5. L. Colvin,	100 lbs.	
1ST CLASS EWES, two years old and over:		8 lbs. 9 ozs.
1. H. Allen,.....	83½ lbs.	10 lbs. 5 ozs.
2. do.	68 lbs.	
2D CLASS EWES, LAMBS:		10 lbs. 6 ozs.
1. P. L. Atwood, ...	82 lbs.	7 lbs. 14 ozs.
2. E. Lyon,.....	56 lbs.	

H. ALLEN, Secretary.

How to Enrich Meadows.—At the meeting of the Little Falls Farmer's Club on the 27th of May, Mr. H. LEWIS of Frankfort, stated that "he had 25 acres of meadow that would yield annually a quantity of hay sufficient for the winter keep of fifty head of cattle. Some of his grass had already lodged, and he thought would not come up again. He should commence his hay harvest in about three weeks. This extraordinary fertility of soil and growth of grass had been effected by under-draining and by top-dressing the soil with sawdust in which was absorbed the liquid manure from his stock. He regarded the liquid manure of more value than the solid excrements of the animal. The conclusion had been arrived at by experiments and from observation. Stakes had been set in pastures and meadows to note the effects of liquid and solid manures, and the growth of grass was in favor of those spots where the animals left liquid manures. Some few years since he commenced using sawdust for the absorption of liquid manures and spreading the compost on his grass lands, the soil responding in a most remarkable manner. Latterly he had been using the dust at the rate of 60 bushels per week. The manure is hauled upon the land and spread as evenly as possible with a shovel or fork; it is then brushed and completely broken up and distributed in fine particles. This division and fineness of the manure is regarded of peculiar advantage, since the plants are better able to appropriate their food, and it reaches a greater number. About half of the meadow is under-drained with horse-shoe tile, the drains being sunk 3½ feet deep. On this portion of the meadow grows the largest grass."

Herkimer Co. Cheese.—On the 30th May about 2,000 boxes of cheese were brought into market at Little Falls. The Journal of that village says that "full twenty buyers were present, and the long processions of heavily laden wagons filled the streets near the depot from early dawn till late in the evening. The prices paid in the morning would average at least seventeen cents; but in the afternoon telegrams were received from the city which induced a slight decline."

Vitality of Turnip Seed.—The London Agricultural Gazette says:—"After extensive experiments, we can declare, as their result, that turnip seed of one year old will only germinate about 50 per cent.; two years old, 30 per cent.; three years old, 15 per cent.; four years old, 5 per cent."



[For the Country Gentleman and Cultivator.]

ALDEN'S ORCHARD WHIFFLETREES.

A great many expedients have been resorted to in ironing whiffletrees, in order to prevent the ends, when they come in contact with a tree, from galling it; but nothing as yet has been brought out which subserves the purpose so completely as the orchard whiffletrees manufactured—and I believe patented—by M. Alden & Son, Auburn, N. Y.

The accompanying illustration represents a pair of them ready for a wagon, but quite too long for plowing among trees.

The ends of the single ones are rounded off, as shown in the figure, and the cockeyes on the ends of the traces are put through a kind of clasp near each end

of the whiffletree and hooked on the hooks, which are driven into the backside of each whiffletree, some four or five inches from the ends.

The loops or clasps near each end are just wide enough to allow the cockeyes on the ends of the traces to pass through, and they hold the traces on the ends of the whiffletrees. Consequently when the whiffletrees pass by a tree there is but little danger they will knock off any bark.

The ends of the whiffletrees should be full as wide as the traces, and the clasps are made a little wider than the whiffletree, with a jog in the under side of them, so that the cockeyes will pass through easily. This is an excellent improvement of whiffletrees.

S. EDWARDS TODD.

Time of Cutting Grass for Hay, &c.

Early in its growth, grass is watery; as it approaches blossoming, the amount of sweet nourishing juice increases; after blossoming, and as the seed ripens, the sugar diminishes, and the hard woody fibre increases. The best time, therefore, generally is to cut within a few days after the principal portion of the crop has appeared in flower. For milch cows it should be cut a little earlier than for working oxen and horses. Hard stemmed grasses, as Orchard grass and Timothy, should be cut earlier than softer sorts.

Expense of Making Hay.—When meadows were cut by scythes, and raked by hand-rakes, the cost of securing a crop was computed to be one-half its value. Now, by the use of mowing machines, horse-rakes, horse-forks, &c., it need not be one-fourth, as the following estimate for cutting fifty acres will show:

Interest on \$100, cost of Mowing Machine.....	\$7.00
Wear and tear, annually, say.....	3.00
Team and man, 8 days, 6 acres per day, (a low estimate,)	20.00

Cost of cutting 50 acres.....	\$30.00
Raking, horse and man, 20 acres a day.....	5.00
Drawing, if 2 tons per acre, 2 men and 1 team; with horse-fork, 8 tons daily, \$3 per day, 12 days.....	36.00
Contingencies, rain, &c., say.....	7.00

Cost of securing 100 tons.....	\$78.00
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Or, 78 cents per ton. It will be observed, however, that the team of the farmer stands idle much of the time in harvest, and that the actual cost, as compared

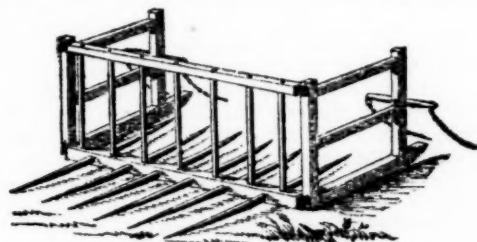


Fig. 1—HAY SWEEP.

with the old way, would therefore be really less. Where the hay is secured in stacks or in hay barns

situated contiguous to the meadow, the use of the hay-sweep in connection with the horse-fork, would probably enable two or three men and two boys, with three horses, to draw and pack away thirty tons a day or



Fig. 2—HAY SWEEP IN OPERATION.

more. The hay-sweep is but little known. The accompanying figures (1 and 2) exhibit its construction and use. It is essentially a large, stout, coarse rake, with teeth projecting both ways, like those of a common revolver; a horse is attached to each end, and a boy rides each horse. A horse passes along each side of the winrow, and they thus drag this rake after them, scooping up the hay as they go. When 500 pounds or so are collected, they draw it at once to the stack or barn, and the horses turning about at each end, causing the gates to make half a circle, draw the teeth backwards from the heap of hay, and go empty for another load—the teeth on opposite sides being thus used alternately. To pitch easily, the back of each load must be left so as to be pitched first.

The dimensions should be about as follows: Main scantling below, 4 by five inches, 10 feet long; the one above it, same length, 3 by 4 inches; these are three feet apart, connected by 7 upright bars, 1 by 2 inches, and 3 feet long. The teeth are flat, 1½ by 4 inches, 5 feet long, or projecting 2½ feet each way—they are made tapering to the ends, so as to run easily

under the winrow. A gate, swinging half way round on very stout hinges, is attached to each end of this rake, and to these gates the horses are attached. They consist each of two pieces of scantling, 3 inches square and 3 feet long, united by two bars of wood 1 by 2 inches, and a third at the bottom 3 inches square, and tapering upwards like a sled-runner—these runners project a few inches beyond the gate. The whiffletrees are fastened a little above the middle of the gate, and should be raised or lowered so as to be exactly adjusted. It may be made for \$5.

In using this machine, not a moment is lost in loading or unloading. No person is needed in attendance, except the two small boys that ride the horses. If the horses walk three miles an hour, and travel a quarter of a mile for each load, they will draw 12 loads, or three tons an hour, or 30 tons in 10 hours, leaving the men wholly occupied in raising the hay from the ground when deposited, by means of another horse with the pitchfork.

It will be obvious that this rapid mode of securing hay will enable the farmer to elude showers and storms, which might otherwise prove a great damage. —*Tucker's Annual Register.*

FIELD CULTURE OF THE BEAN.

In the Co. GENT. of April 7, page 224, an Indiana Farmer makes inquiries upon the above subject and is referred to the Co. GENT., page 203, and also to what the late Judge Buel has said of this crop. Now neither of these methods are regarded at all by bean growers of this section, and they have been raised extensively as a field crop in this township (Newfane, N. Y.) for many years, and for the past 3 or 4 years they have been one of our most profitable field crops, and with us as you travel along it is no uncommon sight to see large and beautiful fields of 20, and even 30 acres planted with beans. H. E. Olinger's method with us would meet with ridicule, as applicable only to the age of one handled plows with wooden mould-boards. His choice of soil and his manner of preparing it is well enough, but to furrow out with a shovel plow 3 feet each way, and to plant by hand six beans in a hill, and cover with a hoe is old foggy in the extreme, for every year increases the necessity of substituting horse for hand labor.

A warm gravelly soil is the best, and if covered with a stiff sod, so much the easier to keep free from weeds; take pains in plowing it; see that every sod is turned over; roll with a heavy field roller; thoroughly harrow; then mark out your rows. For the medium bean I make the rows 28 inches apart; for larger varieties 32 inches. I am particular to secure the best beans for seed, and all of the same variety, for it is very essential in securing the crop to have them ripen at one time, and they sell better if they have a uniform appearance as to size, &c. Plant in drills with a bean planter. I use one that plants two rows at a time, putting on usually about five pecks of seed per acre of the medium. Having finished planting, roll all down smoothly with a roller; it is of great benefit to the crop, especially if you have to cultivate to keep down the weeds. I use a common corn cultivator, one that is so constructed that you can shut it up close. Very often on ground that is free from weeds they never cultivate

them, but I think in stirring the soil it will increase their growth more than enough to pay expenses. We consider the best time to plant usually from the 1st to the 10th of June, although I have seen them planted as late as the 25th, and yield a crop of 25 bushels per acre. The time for pulling and the mode of securing them, &c., I will speak of another time.

We all live to learn much by our own experience, and by that of others, and as the growing of this crop is profitable, will not farmers communicate their practical experience, giving facts by which we may benefit each other. I well remember in our wheat growing days the idea of raising beans as a crop was not thought of, and none were grown except in the garden, but it is acknowledged that here they can be grown for less expense than wheat, acre for acre, and have given the raiser greater profits for the last five years than wheat.

Newfane, N. Y.

JAS. A. MCCOLLUM.

DUCKS—RURAL SCENES.

The duck possesses many excellent qualities. They were great favorites with the ancients from the mildness and simplicity of their character, from their great fecundity, laying a great number of eggs, from the cheapness and ease with which they are provided for. The feathers of the white sort are nearly as good as those of the goose.

They are the most industrious of all the fowl tribe, and we have often gazed on them with admiration to see them sputter in shallow and dive down in deep water.

The inoffensive and harmless character, the social and conversational qualities of ducks, render them not only pleasant but profitable animals to keep, and the contrast between them and chickens, in their nature and habits, is much in their favor. Of the kind and social nature of the duck, the following is related by Mowbray:

We had drawn off for the table the whole of a lot of ducks, one excepted. This duck immediately joined a cock and hens, and became so attached to them that it never quitted their company, notwithstanding some harsh usage, particularly from the cock. It would neither feed nor rest without them, and showed its uneasiness at their occasional absence by continued clamor.

We once had an individual of the crested variety, which, after losing its mate, would keep with a few particular fowls during the day, and at night when the fowls went to roost, she would follow up the stairs on to the second floor, and sit as near the fowls as she could get. But after we had placed a few of the large African geese in the yard, she left the hens and contracted an intimacy with the geese, keeping constantly with them.

The manners and actions of the duck, whether upon land or water, are both curious and pleasant to contemplate. Their regular afternoon parade and march in line, the older drakes and ducks in front, from the pond homewards, is a beautiful country spectacle, to be enjoyed by those who have a relish for the charms of simple nature. A parcel of ducks which have been accustomed to their liberty, were for some particular reason shut up for several hours. On the door of their house being opened, they rushed out, threw themselves into rank and file, and marched with rather a quick step three or four times round a certain space, constantly bowing their heads to the ground, then elevating themselves and fluttering their wings; the ceremony finished, they quickly adjourned to the water. We have laughed a thousand times at the conceit with which our boyish imagination was impressed, namely, that the act we had witnessed was nothing less than a duckish thanksgiving or their deliverance.

C. N. BEMENT.

STRAWBERRIES IN NEW-JERSEY.

L. TUCKER & SON—We are now in the height of our strawberries; commenced ten days since, on the 27th ult., being three or four days earlier than usual. The damp atmosphere, with frequent showers, is filling out the late setting finely so as to insure a long season and large crop where the beds have been kept in tolerable good order. Some growers being scarce of help, omit to have their plantations of strawberries cleaned after they have taken off a large crop of fruit, but if it is intended to produce fruit again it must be cleaned and cultivated. Last season I contracted with the hands that as soon as they got done picking, to go over again and take out the grass and weeds, at fifty cents a row of several hundred rows, we running the subsoil plow along the alleys ahead of them; which then seemed a high price, but the result now shows that the fruit produced by the rows uncleaned is scarcely worth one dollar; the others are worth from five to ten dollars each. Let every farmer resolve to cultivate his crops well, and supply the growing plants with nourishment, and there is no fear for the results.

Our earliest berries were Iowa, Scarlet, Cutter, Jenny Lind, Bartlett, Downer's Prolific, French, and Albany—all of which have brought high prices. French, rather leading, on account of its bright, handsome color and fine appearance, sold readily last week in Philadelphia at 50 cents per quart; Lady Finger and Hovey, 30 to 40 cents, and Albany 25 cents per quart. It is the opinion here that there is as much money to be made from Wilson's Albany as any one variety, commencing early and continuing through the season to yield abundantly. Russell is yielding finely, and giving great satisfaction where it is near some staminate variety, but cannot be relied on for a crop of perfect fruit by itself. Alternate rows of it and the Albany would make a valuable plantation. The fruit might be picked and sold together with advantage.

Cinnaminson, N. J., 6 mo. 6th.

WILLIAM PARRY.

SAVE YOUR CURRANT BUSHES.

The currant bushes and gooseberry bushes—excepting the black currants—are all being destroyed in this section of country, by small green worms, which devour the leaves in a few days, leaving nothing but the naked bushes.

We have just discovered that pulverized white hellebore, *Veratrum album*, will effectually destroy every worm in less than one hour without injuring the fruit or the bushes.

I sprinkled our gooseberry bushes with less than one cent's worth of it; and, in less than two hours, every worm was either dead on the ground or in the last agonies of death.

Yesterday morning they appeared in untold numbers on our currant bushes. The bushes were sprinkled with it; and, in less than two hours, only now and then a worm could be found.

I then placed a few of them on a paper, and sprinkled them lightly with it; and, it gave them all sorts of fits; and they seemed to go into the worst kind of convulsions; and all kicked up and died in a few minutes.

One army of these worms will come up and destroy the leaves; and, as soon as the leaves appear again, eggs will be deposited on the under side of the leaves, from which another crop will soon rise up to devour that crop of leaves.

White hellebore is death to them. The least amount of it, when sprinkled on them, "will give them fits." White hellebore is very poisonous. But there is no danger in using it, if care is only exercised to keep it from flying into the mouth and nose. It would probably cause a person to sneeze to death in a short time. It is a drab-colored powder, very light, and will fly like flower dust. It can be obtained at drug stores, at 50 or 60 cents per pound. A quart of it will weigh about a pound. A fourth of a pound will kill all the worms on a long row of bushes.

I put a few spoonfuls of it in a pepper box, and sprinkle it all over the bushes, as lightly as possible; and turn up the bushes, and throw it all about the base of the bushes—not on the ground—but on the stems and on the leaves, in the middle of the bushes. Put it on at any time, whether the leaves be wet or dry. The least atom of it will arrest their ravages. Therefore, sprinkle lightly, although a liberal sprinkling will not injure the bushes.

I think this hellebore will destroy all kinds of insects on the vines and flowers of our gardens. There will be no danger in trying it on cucumbers, melons, radishes and anything else.

In those localities where the bushes are already destroyed this year, it would be well to obtain a small quantity of it, so as to have it ready for use.

Those who are distant from large drug stores can have it sent to them by mail. Twenty-five cents will pay postage and all, on one-fourth of a pound.

Auburn, N. Y., June 3d.

S. EDWARDS TODD.

COMSTOCK'S ROTARY SPADER.

In regard to this implement, a notice of which appeared in the COUNTRY GENTLEMAN a few weeks since, M. L. SULLIVANT, the great Illinois farmer, writes as follows to the Rural New-York:

"I am in receipt of your favor of the 12th inst., and take great pleasure in replying to your inquiries about, and giving you my experience with Comstock's Rotary Spader.

"I commenced working one of them on the 19th of April, preparing ground for corn, and have worked it constantly since, when the ground was in condition for working. It has spaded, up to this time, about 75 acres. A few days later I started two more, and a fourth some ten days since; they have all been running constantly when it was not too wet. I am working two of them with four horses and one man each; the other two we work in a gang, with a team of six pairs of oxen, driven and managed by one man.

"These machines work 3 feet in width and 8 inches deep, pulverizing the soil more thoroughly and preparing a better seed bed than I have been enabled to do with the plow and harrow. The horse machines do one acre each per hour with a speed of two and three-quarter miles; the gang will do one acre per hour, with a speed of one and three-eighth miles; but these calculations you can readily make for yourself.

"I expect in a day or two to have a machine the full width of a corn row (3 feet 8 inches) at work, with a self-acting corn-planter attached. This machine will be capable of preparing and planting the ground at the rate of one acre per hour, with a speed of two and a quarter miles; we think four horses, or six oxen, and one man will work and manage it readily.

"As to my opinion of it, I have no hesitation in saying that I think it is the greatest step forward that has been made in agricultural machinery. I believe they will supersede the plow on our prairies, and similar soils, and cause a great revolution in Agriculture. So far, the wear seems slight; and I do not believe that the cost of keeping them in repair will be greater, relatively, than plows.

"I can, by the use of these Spaders, prepare the soil and plant it to corn for fifty cents per acre, estimating the wages of men at one dollar and a half per day, and horses fifty cents each. Aside from the reduced cost of doing the work, as compared with the plow, I shall expect, from its deeper and more thorough comminution of the soil, to get a yield of from twenty-five to fifty per cent. more with the same cultivation than with ordinary plowing, which does not average more than four inches in depth in this State.

"Our spring has been backward and wet, the weather is now fine, and plowing and planting are going on as rapidly as is consistent with the scarcity of labor throughout the State. By the aid of the Spaders, I am getting well forward with my corn planting, and hope to finish in good season—much earlier than usual."

Sheep Husbandry---Scours---Grub in the Head.

MESSRS. EDITORS—With this I forward a letter received a few weeks since from N. P. ATKINSON, Esq., of Wheeling, West Virginia. I think it contains some valuable facts in sheep management, and you can publish such portions of it as you think proper.

L. BARTLETT.

DEAR FRIEND—I noticed in a recent number of the Co. GENT., your remarks on the diseases of sheep, and particularly those of your neighbors which were dying off with the scours. Some twenty years since I lost ninety out of one hundred and fifty, in the way you allude to. They commenced dying in September, and continued on until winter. I used to have a medicine chest, and consulted a celebrated sheep doctor, but my success was usually so poor, that I soon dispensed with everything but good keeping. The scouring of lambs is in some measure owing to the character of the season. The best remedy that I have found is to commence feeding them with oats or bran as soon as they are weaned. Continue it on until winter. I have found by long practice, the clover field to be the best place to wean lambs.

In your remarks you allude to the grubs in the head. In this department of sheep diseases I have sustained considerable loss. I have injected with a syringe strong tobacco juice up the nostrils, but am not certain that I ever effected any cure by it. For the last ten years I have lost none by the grub until this fall and winter, and up to this time I think we have lost somewhere between thirty and forty. This grub in the head seems peculiar to young sheep. I think by good keeping early in the fall, I have measurably kept clear of them for the last ten years. Last fall I was absent, and my young sheep were somewhat neglected. When the grub is fairly located in the head, I doubt if there is any remedy. In the fore part of the winter I noticed some of my lambs failing. I picked out seven or eight, put them in a place by themselves, fed them with oats morning and evening, and yet they dropped off one after another until all went by the board; some of them continued six weeks, and then died.

If a person in the sheep business is determined on success, he must keep them in first rate order from the time they are weaned until the spring they are two years old. So says my experience, which is of fifty-one years standing.

N. P. ATKINSON.

MANAGEMENT OF RESTIVE HORSES.

EDS. Co. GENT.—I notice in your paper of the 26th inst. an article from X. Y. Z. on the management of restive horses, which I approve of, particularly the advice to use no severity with a horse of that disposition.

Several years since I owned a very fine young blooded mare, of great nerve and spirit, and endurance almost incredible. She required constant and daily use or she would become unmanageable with most persons.

I could keep her quiet while being harnessed, but as soon as I left her head and took hold of the lines two men could not hold her. She would rear, plunge and start off on a run.

I completely cured her of this by putting a twitch

on the upper lip. A twitch is a loop or cord which passes through a hole in a piece of board; by turning the board the cord grasps tightly anything within the loop. This caused her to stand perfectly quiet until I got into the carriage, when I caused her to be led a short distance by the twitch.

Two applications of the twitch completely cured her. She, however, always required very gentle and firm treatment, and would never bear the whip or harsh treatment.

I drove her several years, and considered her as safe a horse as could be found, with a proper driver. I never struck her with a whip. This method might not answer with all horses. I have frequently used it (always with success when used with kind but firm treatment) on colts that were high spirited and difficult to harness, which colts, if properly broken, make the most safe and useful horses.

If the horse is balky, and will not start with kind, but firm treatment, I think it can be cured effectively.

Last fall I traded for a mare of very fine appearance, and quite fast. The person of whom I bought her recommended her very highly, particularly for standing without hitching—said she would stand for hours. I found this was a fact, and that she would not start at all some times. She was put to the carriage one morning. I was in quite a hurry to get to town. She would not start, and coaxing, scolding and whipping had no effect on her. I called one of the men, and told him to stand by her until I returned, and if she offered to start, to stop her, and to give her nothing to eat or drink until I came home at night.

After standing about six hours she wanted to start, but was prevented. On my return home, after she had stood about twelve hours, I got into the carriage. She started at the word, was driven about six miles, put in the stable and fed, and has never been any trouble since—never has balked the least. G. G. L.

Wilmington, Del., June 7, 1864.

SELECTION OF MALES FOR BREEDING.

The season has now arrived when a horse has to be chosen to which the mares must be taken to have foals by. The time is near at hand when a bull will have to be selected to have the cows breed by, and after a while it will be necessary to decide where a ram shall be bought to serve the ewes next fall. The importance attached to securing proper males for siring the next generation will at once stamp the character of any farmer who attempts to be the raiser of live stock. Many, very many, look only for an animal which can be used at the least outlay of cost and trouble. Any horse is good enough, and the bull easiest obtained will do, and as for rams the two or three little dwindling wretches which were refused by the drover and butcher last summer cannot be put to a better purpose than allowed to run round. Thus in the finest country under the sun for stock raising, the continual cry is, it don't pay to keep stock; the land is not good enough, for nothing fattens without giving more than the profits in grain, meal, &c., besides such bad luck attends the rearing of the young, and the cows give so little milk, the sheep cut next to no wool, and the horse raised rarely pays for food and attendance. Let shame attend such men, for they not only injure themselves and families, but deter others from keep-

ing cattle and sheep, and thus entail a vast loss to the whole community, and moreover occasion the land they occupy to "run out," or become exhausted to such a degree that it will not pay for cultivation.

It is surprising that the wives of these farmers possess far more sense than their husbands, for should they hear of a breed of fowls superior to their own, a setting of eggs is sent for, and the next season every rooster on the premises has to have his head off to make room for the young ones of the better sort, and through attention much money is made by poultry, whereas others have no success, and don't believe there is any profit attached to keeping them.

A great deal has been written and said of late on the subject of in-and-in breeding, but the writer of this has known several cases of great losses occurring through this mode, which, though not taking place in any instance in the first progeny, yet surely showed in future generations, even after fresh blood had been introduced. This was in the cows and pigs, particularly with the latter; the chief mischief was abortion in the cow stock, and in the small number of pigs at a birth with the sows—three, two and one being the whole litter in numerous instances. The fact of large sheep owners doing this with impunity proves naught; but watch these flocks, and in a few years every head of the in and-in bred ones will be sold off under some pretext or other, the real cause being barrenness and utter incapacity for propagating their species. J. B.

Gorse as a Crop for Rough Land.

Having planted twelve acres of furze, or gorse, in England, and had it mowed and bruised by machinery with water power for thirteen years afterwards, it may not be amiss to state a few particulars. I was farm bailiff for Lord Northwick, who, having erected a bone mill, obtained another machine for grinding and crushing gorse, to work from the same water-wheel. Most of the seed was had through "Thomas Gibbs & Co.," the agricultural seedsmen of London. It was French growth, but some was gathered from the common kind growing in our own fox coverts, which did equally well. It was drilled, twelve lbs. per acre, twenty inches apart, and came very thick. It cut from 40 to 60 tons per acre on the part best suited for its development, which was a very poor, soft, sandy loam; on a portion which was stony and on the hill-side the crop was two-thirds lighter. It was mowed down close to the ground, and if there was more than could be eaten, it was all cut and otherwise disposed of, because it would turn to wood the second season. Horses eat it, and there is a saving of other fodder. It improves the flavor of butter when given to cows, but it is astringent in effect, and has nothing in it to fatten, barely keeping any cattle in store condition. As his lordship had 600 deer, we gave the chief part to them, and the pulpy mass of stuff was devoured with the greatest avidity, and in consequence several stacks of hay were saved and the herd increased in number to 800. A man and boy attended to the machine, and another man mowed and pitched on the loads; a second boy doing the hauling with two horses to a cart used for the purpose. The gorse was placed on similar to hay, and, by tying on with ropes, very heavy loads were taken

to the mill. The bulk was decreased so much by the process that the boy took it to the Park on his way back, scattering it on the greensward as the horses continued walking along.

Having always plenty of turnips for the sheep, none was given to them, but should it be introduced here, it might be valuable where no roots can be grown, if a little meal was sprinkled among it in troughs. It would be folly to expect sheep to do any good by browsing, and, moreover, they would lose half their wool by crowding between the bushes. It appears to be very hardy in winter, and will be found in bloom in the coldest spells. There is an old saying, that "when furze is out of blossom, kissing's out of fashion." J. B.

Foreign Notices.

Market Fairs.—We have often commented upon the advantages attendant upon the establishment of these occasions, and expressed the hope that they would ere long become an American "institution," as they have been an English one for a long period of time. As affording an example, we observe that the farmers in the vicinity of the town of Hertford, about 20 miles from London, have just been giving a dinner to a firm of auctioneers who were instrumental in establishing a regular fat stock market there in 1852, at first held monthly, but since 1861 once a week, and the benefits of which this compliment was intended to mark. At the weekly auctions held in 1863 it seems that 1,877 oxen, 22,489 sheep, 123 calves, 2,702 pigs, and 1,166 lambs were sold—total head of stock 28,357; total value £107,013, or over half a million dollars. The sales of 1856 were less than £20,000, showing a gradual increase every year until 1863, as above stated, the amount was five-fold that of seven years before.

The French Crops.—All reports agree that up to the first or second week in May the season was an unfavorable one in France. "A prolonged drought and a temperature generally too low for the season have aggravated the prejudice occasioned to all cultures by the frosts of winter, which occurred without the ground having been protected by a mantle of snow. The wheats and the oats present a sad appearance, and spring forage is very backward. Agriculturists who have not food in reserve for their stock, begin to be in the greatest embarrassment, and lean cattle are selling at low rates." Toward the middle of May there was some improvement, the temperature being more genial with fine rains.

Statistics of Disease among Cattle.—A correspondent of the North British Agriculturist gives a statistical account of the number of cattle bought, sold fat, sold diseased, and buried; with the description of animals kept each year since June, 1839, on a farm in Edinburghshire. The whole number bought in the twenty-five years was 1867; of these, 1677 were sold fat, and 99 were diseased, 9 were slaughtered on account of accident, 7 died from constipation, 9 from stomach staggers, 67 from lung disease, and 7 from splenic apoplexy. Of these, 777 were of Scotch breed, 168 English, and 923 Irish. Thus, during a quarter of a century, out of an average herd of cattle, amounting each year to about 75 head, 67 died from lung disease and 22 from other ailments. The writer adds: "I have no reason to believe that the above results vary much from what is the average experience of most feeders of cattle. Of course some parties may have had more disease, while others may have had fewer cases. Still, these figures justify no such absurd alarm as has been raised, nor support the idea that disease arises from contagion."



SNOWY OWL. *Nyctea nivea*. DAUDIN.

The Snowy Owl is the handsomest of all the Owl family, not only on account of its size, which is very considerable, but also on account of its beautiful plumage and large shining eyes.

This bird is only a winter visitor in the United States. It is seldom seen here before November or after the beginning of February. In Pennsylvania it is only a winter visitor, and this is likewise the case even as far north as Massachusetts.

Nothing of any importance is known concerning the breeding of this bird in the United States. Its nest has been found in Europe frequently, but the writer has never heard of an instance—well authenticated—of its breeding here.

Sir JOHN RICHARDSON, who had excellent opportunities for observing its habits, while in the Arctic regions, says that it hunts its prey in the daytime, and that it breeds upon the ground, and lays three or four globular white eggs.

The Snowy Owl lives principally upon fish, which it catches in a very singular manner. It will seat itself by the side of a small creek, and close its eyes apparently, but is all the while really keeping a sharp lookout. Presently an unlucky fish swims by. The watchful eye of the Owl has detected it, and dash goes his claw into the water, and almost simultaneously out comes the fish in its grasp. This is continued until it is gorged, when it retires to a tree, upon which it alights and sleeps off the effect of its previous gorge, only however, to again pursue the same plan.

An amusing anecdote is told of one of these Owls, which had settled upon the rigging of a ship by night to rest after its long journey. The bird was quietly seated upon one of the main yards, when it was suddenly aroused from its slumbers by a sailor who had been sent aloft to perform some nautical duty. The man, terrified at the two glaring eyes that suddenly opened upon him, descended precipitately from the rigging, declaring that "Davy Jones" was sitting upon the main yard! It is perhaps unnecessary to state that "Davy Jones" is the sailors' name for the evil spirit.

J. P. NORRIS.



Butcher Bird, or Great Northern Shrike.
Collyrio borealis, BAIRD.

The Butcher Bird, or Great Northern Shrike, (*Collyrio borealis*, BAIRD) was, prior to the time of WILSON, considered as identical with the English Butcher Bird, (*Lanius excubitor*, LINN,) but WILSON doubted the identity of the two, and subsequent authors have proved it. One of the most observable of their differences consists in the bill of the two species. The bill in the

American bird is much more hooked than in the European. The singularity of the habits of this bird has perplexed many naturalists. Some, on account of the shape of his bill, have classed him with the hawks, while others have classed him with the jays, on account of his feet. There is, indeed, an apparently strange dissimilarity between the bill and feet of this bird. With such a bill as this bird has, we naturally expect strong talons, to enable him to hold his prey. But, on the contrary, we find comparatively insignificant ones. This seeming paradox is easily solved by examining closely his habits. If we do this, we will perceive that he never makes use of his claws to tear, or in any manner help him to catch his prey, but performs both with his bill. Butcher birds have been seen to pursue small sparrows, and strike them dead with a single blow of their powerful beak.

The Butcher Bird chiefly feeds upon grass-hoppers, and other like insects. When he has eaten enough to satisfy the cravings of his appetite, instead of hoarding up the surplus food in chinks, crevices in trees and holes in stone walls, after the manner of jays and crows, he preserves his by impaling the grass-hoppers, &c., that constitute his food, upon sharp thorns.

When grasshoppers, and other insects of a like character, fail him, he resorts to the cruel practice of catching and eating various small birds. These he often treats to the same horrible death that he does grass-hoppers—impaling them alive upon sharp thorns, where they are left to die a miserable death.

According to WILSON, the Butcher Bird, or Great Northern Shrike, builds its nest in the upright fork of a small tree in the midst of a wood. It is outwardly composed of grass and moss and lined with feathers. The eggs are of a pale cinereous color, thickly marked at the large end with spots and streaks of rufous. The writer not having a specimen of their eggs in his cabinet, is unable to give measurements of them.

HOUSE-CLEANING.

Papering.—If you must do this yourself, look over your wall, and fill any little breaks or cracks with a little plaster of Paris mixed up with water—(mix very little at a time, as it soon hardens,) or with putty. Brush over the wall with a solution of one pound of glue to three gallons of water. Have ready a smooth paste of flour, allowing one pound alum to three gallons of paste. Trim one side of your paper neatly and cut it in lengths of the ceiling's height. Have a long, clean table, and lay the right side of the paper down upon it, and, with a white-wash brush, spread the wrong side of the paper smoothly with paste. Take the two ends of the paper in your hands, (the right side folded in) step quickly up on your platform, and begin at the top, pressing the paper down smoothly with a clean towel. The *trimmed edge* of the second piece will lap over the untrimmed edge of the first piece, and so on. The figures must be matched exactly, as in a carpet, and you should begin in the most obscure corner of the room, putting on the first piece by a plumb line. The border will have to be cut in pieces that you can handle easily, and that, as well as the paper, may be so accurately joined that not a seam will be discernible. Simple and small figures are easiest hung.

Screens, &c.—By the bye, if you have any fire screens, bed canopies, or rugs, to make, it is well to do it while your hand is in. The screens or canopies must have a firm cotton cover, tacked on smoothly and tightly. The paper is then pasted on them as on a wall, and their good looks depend on the neatness with which the border and centre piece, if they have any, are put on.

Cheap Rugs.—Very good rugs for hearths, wash-stands, or bed-sides, may be made by stretching a stout piece of cotton cloth, the size you desire, on a clean floor or table; paste a pretty paper on it, and a suitable border around. When dry, give it two or three coats of varnish, and bind and fringe, if you like. These rugs are quite pretty, and will last astonishingly, and may be cleaned just as oil cloth. They do very well for plain, spare chambers, and they have the recommendation of being very cheap.

Furniture.—Bedsteads should be taken apart at least at the fall cleaning, washed thoroughly in the crevices subject to the attacks of bugs, and when dry, coated with corrosive sublimate dissolved in alcohol, mercury mixed in beaten white of egg, or, for common coarse furniture, fill all the crevices not likely to come in contact with the bed clothes, with strong, common brown soap.

Then rosewood, mahogany, or any fine furniture, must be freed from dust and wiped clean of fly specks or other soil, and after rubbed over with very fine rotten stone mixed with olive oil, and when dry rubbed off with a soft silk cloth. If your fine furniture needs varnish, get a first rate professional hand. But, with good cabinet-makers, varnish and suitable brushes, for common furniture, you may do the job quite well yourself. Be sure to have the article clean when you begin; have the varnish thin; put on a small quantity at a time, and rub it in well, following the grain of the wood.

If you live out of reach of a cabinet-maker's aid, you may repair and varnish up considerably, if you have patience and skill. If a piece of veneering is off, cut off the edges of the break smoothly, fit in a piece of veneer exactly, (the grain running with that of the furniture,) paste it in with glue, and tack it in with a number of common pins slightly. When the glue hardens, draw out the pins, and, with a piece of glass, scrape the newly joined edges perfectly even. Now, if the piece of furniture is much scurfed and abused, *scrape off all the old varnish* with glass carefully; then rub it with coarse and

fine sand-paper successively, until smooth as satin; proceed to varnish, and you will be astonished at the result of your labor.

A fine feather brush and soft silk cloth should be used daily on fine furniture. The dust should be beaten out of the cushions with the hand; brocatelle or hair cloth wiped with a clean cloth; velvet with a worsted plush roll, or better still with the hand only.

Marble.—All marble should be washed commonly with luke-warm water and a sponge; grease spots or stains can be removed by washing with salts of tartar or repeated applications of fine chalk.

Iron Spots may be removed by rubbing with a piece of lemon, and washing after with cold water.

Alabaster should be washed with a brush thoroughly with aqua fortis in clear water—(an ounce to a half pint)—then rinsed in cold water and set in the sun to dry.

Ink Spots on wooden furniture may be removed by rubbing on oil of vitriol mixed with two parts of soft water. The white marks from heat may be removed by rubbing first with oil, and after with alcohol, or with spirits of hartshorn.

Unvarnished Mahogany, or any other furniture wood, may be polished several ways, and by frequent rubbing be kept very nice.

A piece of beeswax as large as an egg, half as much rosin, melted in a pint of spirits of turpentine, spread over a table evenly, and when cold well rubbed with a soft cloth, looks well.

A gill of spirits of turpentine, one of sweet oil, and a pint of sweet milk, makes an excellent polish—well rubbed after—or

Take a cake of pure beeswax, rub it all over the surface you wish to polish; then wrap a linen cloth over a warm smoothing iron, and rub it over the table until the wax is evenly spread; then with a woolen cloth rub until smooth and bright. We used to spend much time in an old pioneer house, the best rooms of which were finished with black walnut, and kept, *with this polish only*, as bright as mirrors.

Picture Frames, gilt ornaments, &c., and the glass over pictures and engravings, should be cleaned with whiting as directed in previous receipts for cleaning glass. Water may injure both picture and frame. The gilding should be brushed or wiped very softly and carefully.

Oil Paintings may be wiped with lukewarm water and a soft sponge, and dried with a soft cloth. The gilding cannot be cleaned by any trials I have made, and I have had woeful experience in trying.

Venetian Blinds should be brushed between the slats every morning, and occasionally cleaned as other painted work, care being taken not to discolor the trimmings with water.

Oil Blinds must be stretched out on a table, held firmly and washed quickly with mild tepid soap suds, and wiped dry.

Vermont.—The State Fair is to be held at White River Junction in September. On the first day of the fair there will be a wool growers' convention at which Gov. Brown of Concord, Mass., will deliver an address; on the second day the Hamburg flag will be presented to the Society by Col. Needham, and on the third day will be delivered the annual address. Competition open to other States and the Canadas.

Massachusetts.—We observe that at a meeting of the Trustees of the Agricultural College in Boston last week, it was voted, 8 to 4, to locate the college at Amherst. There were several towns which had applied for the location, and the citizens of Northampton had made particular efforts to secure it.



ALBANY, N. Y., JULY, 1864.

The State Fair.—The Premium List for the Twenty-fourth Annual Fair of the New-York State Agricultural Society, at Rochester, Sept. 20-23, has been printed, and copies may now be had by addressing the Secretary, Col. B. P. JOHNSON, at Albany, or on application at the Offices of the Rural New-Yorker and Genesee Farmer at Rochester. Among classes in which there is an increased number of prizes offered is that of Merino sheep. It will be remembered that under the present ruling of the Society, the premiums in all the different classes of animals are open to competition for all animals that may be exhibited, whether imported or from other States and Canada, except those animals which have received the highest prize heretofore.

Horticultural.—We occupied a leisure hour the other afternoon on the grounds of Mr. JOHN DINGWALL of this city, who has given much attention to the small fruits, as well as floral matters. Among the prominent features of his grounds is a specimen row of grapes, comprising about seventy leading varieties, some of them not yet fruited. But the younger vines afford as good an opportunity as the older for the comparison of peculiarities in foliage and growth, and the writer was interested particularly in examining the Adirondac which he had not before seen, for the purpose of detecting any indications its appearance might give on the somewhat mooted question of its native or foreign origin. So far as the leaf is concerned, every mark of the native vine is certainly present, and Mr. D. considered it strange that any doubt of its American origin could have been seriously entertained.

The Delaware vine, as many may be aware from unpleasant experience, is somewhat difficult of propagation. Mr. Dingwall has a plantation of about 2,700 vines, started this year, which attracted our notice for their fine appearance. He succeeded in getting this number of vigorous plants out of about 3,000 buds cut, in the following way: The cuttings (each containing a single bud) in February last were put into a cracked jar, in alternate layers of an inch or two with about equal quantities of dampened moss, and placed near enough the fires to have a constant heat of perhaps 60°. The first of March, after lying three weeks in the moss, the buds were perceptibly swollen, the wood softened, and the cuttings partially calloused; and they were set out as usual in white sand and leaf mold in a propagating frame over the hot water pipes, at a heat of 75°. The growth made was most satisfactory, and in four weeks the large proportion above mentioned were ready for potting. When potted they were placed in a hot-bed with slight bottom heat until thoroughly established for transplanting into the open air.

Our Minister to Japan, Hon. R. H. PRUYN, of this city, has favored Mr. Dingwall with a number of plants and seeds from that country, some of which are of considerable promise. Several varieties of Maple are new, and if as hardy as we presume they are, will be decided acquisitions. They came without names, but two of them seem to correspond, we should think, with the *Acer dissectum fol. pinnatifidus rubra* and *fol. pinnatifidus viridibus*, mentioned as shown at the late horticultural exhibition at Brussels. A third, which we cannot ever attempt to identify by that list, is perhaps more beautiful than either of the above, having what botanists would probably term a palmately seven-cleft leaf, of very

regular form and very regularly and beautifully veined with silver. We trust they may thrive and multiply.

We have not time at present to linger among the strawberries; suffice it to say that the *Triomphe de Gand* was incontestably the richest and sweetest we tasted, yielding quite well, and berries of fair size. It should be covered in winter. The *Russell* seemed better in quality than as we have before tried it after being some time picked; it proves a hardy and vigorous plant, and a good bearer—is sweet and yet marked by considerable character—in which last respect, to our taste, the Austin and Prince's Magnate were greatly lacking, although large fruit and not objectionable in flavor. Wilson's was yielding well, and is largely grown as a market variety.

A Good Bargain.—In noticing, p. 301 of the Co. GENT. of May 12, the late Short-Horn Sale of Mr. LAW-FORD in England, we omitted to remark the very good price paid for one of the bulls. The Mark Lane Express says: "Imperial Oxford by Second Grand Duke from Oxford 13th, caused, as might have been expected, a very obstinate fight among the believers in Bates. After 200 was reached, the Rev. Mr. Jefferson and Mr. Hegan fought it out up to 300 gs., and the latter, who would have gone on considerably farther rather than lose him as a cross for his Duchesses, was the conqueror."

Imperial Oxford, it may be remembered, was one of the bulls sent to England by SAMUEL THORNE, Esq., of Dutchess County, and sold by him there for 200 guineas. His owner has made fifty per cent., it now appears, on the bargain, beside having had the services of the bull.

Agricultural Statistics, &c., in Canada.—Hon. GEO. BROWN, M. P., Chairman of a Joint Committee of the Legislative Council and Assembly of Canada, appointed to inquire and report what measures can be adopted for the advancement of Agriculture in the Province, has issued a circular containing twelve leading questions, and a large number of subordinate inquiries, calling for the information requisite in such investigation. The questions relate, 1. to the operations of the Bureau of Agriculture; 2. to the collection of Agricultural Statistics; 3. to the promotion by government aid of land drainage; 4. to the taxation of non-resident wild lands with the view of promoting their settlement and cultivation; 5. to changes in husbandry to increase the fertility and production of the country; 6. to the extension and improvement of dairy farming; 7. to that of sheep farming, and 8. to the culture of flax; 9. as to the expediency of public appropriations for importing improved stock; 10. as to the improvement of the prize system adopted by Provincial, County and Township Agricultural Societies; 11. as to the establishment of model farms, and, 12. whether there is any other direction in which the government can lend its aid toward the advancement of Agriculture in the Province.

This circular shows that the Committee have taken hold of their duties in earnest, and the facts and opinions collected in response will aid materially in shaping their Report. Such action affords proof of no more than a just recognition on the part of the Provincial government, of the importance of doing its utmost to develop the agricultural resources of the country—to which end, indeed, the authorities and societies of Canada have long displayed a degree of liberality and public spirit which might be advantageously emulated, with similar good judgment, on this side the lines.

Pennsylvania.—The Pennsylvania State Agricultural Society has selected Easton as the place of holding its next annual exhibition—date not given. The enclosure is one of the most extensive of its character in the State, containing over 30 acres of ground.

How to Get a Farm and Where to Find One.

—The author of that useful little treatise "Ten Acres Enough," has prepared a second work under the title above quoted. The preface states that his "effort has been to group together some of the many remarkable openings for agricultural enterprise which exist in our country. Wherever we turn they are to be found. The great West has long abounded with them, and the South will soon be equally prolific. The Middle States, New-Jersey, Delaware and Maryland, contain thousands of these openings, where cheap lands within reach of cash markets have long been waiting for purchasers. But they have remained comparatively unknown to the agricultural public."

But this is not the sole object of the book. It traces the success of those who, beginning with little or nothing, have acquired ample farms by their own intelligent cultivation and management; and it aims to supply as much information as possible, to guide others in the same path. Mr. Jas. Miller, New-York, has this volume in press, and we shall look with interest for its appearance.

New-England.—It is stated that the arrangements for the first exhibition of the New-England agricultural Society, which is to take place at Springfield, Mass., Sept. 6, 7, 8 and 9 are progressing satisfactorily. The scale upon which it will be conducted may be judged from the premiums offered, which amount in the aggregate to \$10,000. The address before the Society will be delivered on the 9th by Gov. Andrew, and there will be farmers' meetings for the discussion of topics connected with practical agriculture every evening during the fair. Nearly all the railroads in New-England will transport stock free of charge.

New-Jersey.—The Legislature of this State have voted the proceeds of the U. S. Agricultural College Land Grant to the organization of an agricultural department in connection with Rutgers College, at New Brunswick. As the funds of the College, and the proceeds of the U. S. Agricultural lands are both exclusively devoted to the payment of Professors' salaries and the expenses of instruction, a meeting of the friends of the institution has been held with the view of raising money for the erection of the new buildings and other outlay incurred in bringing the department into working order.

An Executive Committee was appointed—also sub-committees from the several counties. The committees from Middlesex and Somerset counties pledged themselves to provide the farm—and all expressed themselves as ready to commence immediate efforts to supply the needed means for putting this institution in full operation, and ready to meet the high expectations of its friends and of the State.

Relieving Choked Cattle.—We have seen many cattle choked, but so far have never found but one remedy that was entirely safe to the animal. This is the insertion of a stout wooden frame to hold the mouth open, while the arm is thrust through this frame and down the throat at full length, to withdraw the obstruction. Using a flexible rod for ramming the obstruction downward is unsafe, on account of the liability to bruise the throat, and can never succeed very well, unless the obstruction is already far down. We observe, however, in a late number of the Rural New-Yorker, the notice of a mode of using this remedy which we think must be attended with very little danger and succeed in all cases where the obstruction is not in the upper part of the throat. It consists in tying a piece of pork-rind on the end of the flexible stick, so that the soft part of the pork shall be outward. It must be secured to the stick immovably by a piece of strong twine. Its

softness and lubricating character enables the operator to push the obstruction downward with more ease and safety than could be accomplished in any other way. The head should be held firmly by the horns in a nearly level position, and the tongue drawn out by the hand.

Good management, by seeing that apples, potatoes and the other food placed before cattle, are always properly sliced before feeding, would obviate the necessity of anything of this kind; but as we cannot wholly avoid the employment of careless laborers, it is well to understand the remedy.

Experiment with Manure.—I. PULLEN of Hightstown, N. J., recently related to us an experiment showing the great superiority of surface manuring in autumn. One-third of a field in strips, received an autumn dressing of manure at the rate of about twelve or fifteen loads per acre. A second portion was manured in the spring with an equal quantity, and a third was dressed with guano, at the rate of 300 pounds per acre. The crop on the fall manured part was about "three times as good as on that manured in spring. The guano gave an intermediate result. The second year guano was applied over the whole, and the third year the land was left in grass. During both the second and third year, the growth on the autumn manured portion was decidedly the best; the second best was on that which was guanoed the first year; and the poorest of all on the spring-manured portion.

Sale of Alderneys and Ponies.—Mr. RICHARDSON's sale of Alderney Cattle and Shetland Ponies at New-York, last week, resulted in the following large returns:

Lot 1.	Alderney Cow "Fanny," to calve in August,...	\$250.00
2.	do. do. "Red Rose,"	310.00
2½.	do. Bull-calf,	50.00
3.	do. Cow "Beauty," to calve next month,	400.00
4.	do. do. "Rose-Bud,"	345.00
5.	do. Heifer-calf of Rose-Bud,	105.00
6.	do. do. "Clover," to calve in July,	275.00
7.	do. Cow "Molly," imported, but not warranted to breed,	235.00
Total,		\$1,970.00
8.	Shetland Pony, nine years old,	\$120.00
9.	do. Stud, seven years old,	175.00
10.	do. Mare, four years old,	185.00
11.	do. Yearling colt,	115.00
12.	Imported Welch Pony,	275.00

It will be seen that the average for six Alderney cows and heifers reached the high figure of \$320. So much inquiry was made for the Short-Horns and Sheep, the sale of which had been deferred, that Mr. R. has concluded to offer them at the same place on Tuesday, the 28th inst. For particulars see advertisement.

Michigan.—Mr. HOWARD, as Secretary of the Board of Agriculture, has issued a circular to the farmers of Michigan, calling for information as to the crops, stock and implements of the State, the use of manures, and other subjects relating to its agricultural resources and practice. The returns received will be made available for the public benefit, through his next Annual Report.

Pears in New-Jersey.—On a recent visit to Hightstown, New-Jersey, ISAAC PULLEN, an intelligent fruit-grower of long experience at that place, informed us that the Bartlett Pear was nearly the only sort that uniformly succeeded in that region, and proved by far the most profitable variety. Next to this he placed Manning's Elizabeth, which he thinks will prove an excellent and reliable sort. The Flemish Beauty cracks very badly, and proves nearly worthless. Giffard also cracks much.

Broome County.—The Agricultural Society of this county is to hold its Annual Fair at Binghamton, Sept. 13-15, and a Horse Show, Sept. 16.

Trial of Implements Needed.—The editor of the New-England Farmer, in speaking of the large number of different Mowing Machines now before the public, urges a trial of their comparative merits during the coming haying season, "where all interested may attend and judge for themselves which is the best machine among them all, and the one which they should purchase." He would have no premiums offered, but leave the judgment to the decision of those who are present to watch the trial, and adds that it "should take place on the line of some railroad, and not far from it. Perhaps Western New-York would be as convenient a locality as could be selected,—near Albany, or beyond, on the line of the New-York Central Railroad."

This affords us the opportunity of remarking that during three years past the Executive Committee of our State Agricultural Society have had the subject of a general Trial of Implements, including particularly Harvesting Machines, under consideration. It was much hoped that such a trial could have been held the present summer, and the idea was only abandoned for the reason that scarcity of labor together with increased demand for farm machinery is rendering it very difficult for manufacturers to fill their orders this season, and they would not therefore take that general interest in such an occasion which it is very desirable should exist to render it of any great utility,—even if they did not altogether decline to detach attendants from other duties to be present as competitors. The conclusion was reluctantly reached that the proposed affair was now impracticable.

The recommendation that no premiums should be given, is one which we think on farther consideration our contemporary would withdraw. We are to remember how very few comparatively can be present at such a trial and have the opportunity of forming an intelligent opinion as to its results. Two, three or five well qualified judges could ascertain the merits of each machine far more thoroughly than the crowd of bystanders, and their report when on record, if drawn up as it should be, (and we confess it is difficult to find a model in this respect,) would not only be of as much use to the farmers of the whole country as to those of the neighborhood, but it would also register the exact degree of improvement now attained as the basis of merit in all future trials. Such a report would have no specific end except in a determination of first, second, third best, and so on; and while we think no very large premiums need be offered, we would have a simple medal or diploma, to present as evidence of the triumphs of the successful. It may also be added that spectators at a careful trial are more an impediment than anything else, and therefore that the larger their number, the less they would themselves be likely to learn, while, by excluding committees of award, the rest of the world would be prevented from learning anything at all.

Cheese and the Foreign Trade.—Mr. Charles Taylor, who appears to have been long engaged in the cheese trade at New-York, has written a letter to Mr. Adam Brown of Hamilton, C. W., which that gentleman sends for publication to the Canada Farmer. Mr. Taylor says he began shipping American cheese to England 17 years ago, paying 6½ cts. per pound for the best he could find in October when there was a fair stock. "There was a duty then of 5s. per cwt. sterling, which is not on now. At that time one-half was inferior, one-quarter fair, and one-quarter good. We shipped for a number of years little short of 100,000 boxes of 50 lbs. each from this country to England, improving in quality each year." He says this improvement has increased under the factory system, and that "we are now producing fine cheese, which sells for higher rates than some

English made, but improvements are yet to be made to equal Stilton, Cheddar, Cheshire, Double Gloucester, and other fancy brands of English manufacture."

The numerous well ventilated steamers, without which cheese could not be shipped in safety during July and several following months, have done much to promote the trade, a single steamer sometimes taking as many as 12,000 to 20,000 cheeses in autumn. "There is nothing in this market," adds Mr. Taylor, "that sells so readily as cheese—the demand never ceases. It can be shipped all the year in steamers, and for several months in sailing vessels; the voyage mellows and ripens it, so that the cheese made here in April is fit for use in England before their own make is ready."

This assertion, coming from one who ought to be well qualified to judge, is encouraging to those who fear the factory system is likely this year to be overdone.

Early Peaches.—"I send you by my son two small specimens of Hale's Early Peach, now ripe, and a Troth's Early Red, to show the difference in the time of ripening. They were grown side by side in my Orchard House; my object in so placing them was to ascertain the real difference in the time of the ripening of these two varieties. The first (Hale's Early,) ripened on the 8th May, nine days ago. I think the Troth's Early will not ripen under a week from this, making a difference of fifteen days."

The above letter from Mr. ISAAC PULLEN, long and favorably known as a Nurseryman at Hightstown, N. J., was accompanied by the samples referred to, fully bearing out the truth of his statements—also by lithographs of other specimens of Hale's Early, forced in a similar way. Peaches before the middle of May, are of sufficient rarity to be highly prized, and these had all the aroma of August or September. Mr. PULLEN is extensively engaged in forcing for the New-York market, where the confectioners now pay \$6 a dozen at wholesale for such specimens, retailing them at from 75 cents to \$1.25 each, according to size and beauty. If opportunity offers we may be able to give an account hereafter of Mr. P.'s houses, and the system of management adopted.

Canada West.—A letter from JAS. JOHNSON, Esq., President of the Provincial Agricultural Association of Upper Canada, reminds us that that very active and efficient body is to hold its Show, the coming autumn, at the city of Hamilton, Sept. 26—30 inclusive. The Prize List of the year is very liberal, amounting to nearly \$12,500. Our manufacturers should note that the Prince of Wales' Prize of \$60, will be given this year for the Best Portable Steam Engine, not less than Six Horse power, suitable for Agricultural purposes—the Association giving a second and third prize of \$30 and \$20. These Engines will be required to be set in motion on the ground, and be ready to be applied to any implement which it may be desirable to test the working of.

Classes have been added for Angus cattle and Shropshire sheep, to the prize lists of former years. In the several classes of Sheep, evidence must be given that they were shorn bare after the 1st April of the year in which they are exhibited.

The Cultivator.—I have received the CULTIVATOR, and can say it contains the most good reading for the least money of any publication I know of. I shall try to obtain some new subscribers. H. B.

A California Herdsman.—A late California paper says that Abel Sterns of Los Angeles, California, lost about 7,000 head of cattle, through want of food, during the last winter. That gentleman is believed to be the largest stock and land owner in the United States. He owns this year 48,000 cattle besides 9,000 calves.

Inquiries and Answers.

Clover Seed.—I would like to inquire if clover seed can be sown in the chaff profitably and to good advantage. E. S. [Clover seed may be sown in the chaff if care is taken to select a perfectly still day. It must, of course, be sown by hand, as it will not pass well through a machine, and additional care is therefore required to spread it evenly. The chaff retains moisture, and it is rather more apt to grow than clean seed.]

Muck.—I have a large bed of muck on my farm, and would like to know the proper method of applying it to my land? G. C. F. [Muck varies in character and quality, as well as the soil to which it is to be applied. If consisting simply of decayed vegetable matter, it will be useful applied directly to land deficient in this ingredient. If the muck contains carbonate of lime from shells, or sulphate of lime, as sometimes happens, it will benefit all soils which are improved by an application of these respective substances. But generally the best way to apply muck is to get it out and let it dry in large covered heaps, and then spread it successively over barn-yards or the accumulations of manure, or directly as an ingredient of compost heaps, as an absorbent. The quantity or proportion of the muck is not essential, but it does well when in about equal bulk with the manure.]

Work on Agricultural Chemistry.—J. W. S. of Kansas, inquires for a treatise on Agricultural Chemistry free from technical phrases, which will give him the component parts of vegetable substances generally. Johnston's Elements of Agricultural Chemistry, a duodecimo book published by C. M. Saxton of New-York, will probably answer his purpose; but it will be necessary for him to become acquainted with chemical terms in order that he may understand it.—In the same way that he would have to know the meaning of architectural terms in order to understand a description of the different parts of a building. To understand the English language, without knowing the meaning of words used for various different purposes, is impossible.

Sowing Arbor Vitæ.—Please inform me through your paper, or invite your numerous subscribers to give what information they may have concerning planting arbor vitæ seeds—whether in the spring or fall? Do the seeds want scalding or not? L. Y. H. Northville, L. I. [The seeds must not be scalded—plant them early in spring, in very fine mould, sifting it over them about one-fourth of an inch thick, and keep it moist by shading the surface. The young plants must also be shaded the first year.]

Water Pipes.—Have earthenware pipes (similar to drain tiles) been found to work satisfactorily for water supply from a ram, or wheel and pump? The spring from which I wish to supply house, barn, garden, etc., is fully 600 yards distant, with a considerable rise to be overcome, and, at present prices, metal pipes are out of the question. I. Baltimore Co., Md. [We think the wooden pipe, referred to in the advertisement of H. H. Babcock, Watertown, would be likely to answer our correspondent's purpose, and prove cheaper and as good as metal pipe. It is laid in a coating of water lime or cement, and we have favorable accounts of its durability from those who have tried it.]

The State Fair.—B. W. P., Pennsylvania. No "family" or member's tickets of the kind to which you refer are issued at the Fairs of our State Agricultural Society. Exhibitors receive a pass to enable them to attend personally to the articles or stock they show; the charge for admission to all others is 25 cents each. The Fairs are "open to the public" at this price, from the time the exhibition begins Tuesday morning until it closes Friday afternoon. Tuesday, however, the show is less complete and attractive than on either of the three following days.

Bed-Bugs.—I will be much obliged to you if you will inform me how to exterminate bed-bugs. I am unfortunate enough to be troubled with them in my house. W. Y. W. [Take down your bedsteads and wash them thoroughly in hot water. Then procure from a druggist a solution of corrosive sublimate, and apply it with a feather to all the places where they are likely to lodge themselves, and we will warrant a perfect cure if this solution is applied, say once a week, as long as any bugs are discovered.]

Bugs on Vines.—Having recently removed from a city to a residence on a farm, I am somewhat rusty in agricultural matter. Being a subscriber to the Co. GENT., I am in-

duced to ask you what is the best means of protecting cucumber, melon and squash vines from the ravages of bugs? I find two kinds—one a black and yellow striped bug, the other a very small black one. W. B. J. Aqua Co., O. [Of the many ways recommended by our correspondents in former volumes, we reproduce the following: "Take about one quart of dry sifted wood ashes, add one or two tablespoonfuls coal oil, (such as is used for lamps,) rub it well in with the hands, then pass the mixture again through the sieve. To apply it, sprinkle a small quantity on each plant, and after a rain repeat. If already on the plant, the bug will leave at once, and will not return." Another writer says that three or four feathers from a hen's wing or cotton batting on split sticks, dipped in spirits of turpentine, and placed in the hill so as to extend over the vines will keep away these bugs. The dipping should be repeated as often as the turpentine loses its strength, and after every shower.]

Harvesting Barley.—I will be much obliged to you for some directions in regard to harvesting barley, so as to prevent loss by the shelling of the grain? X. I. X. [Will some of our barley growers please answer?]

Treatment of Colts.—Will you please to advise an old reader of the best mode of treating yearling colts? I have three which I wish to show at the September fairs. Is it better to take them from grass a few weeks previous to the exhibition, or let them run? D. R.

Neat's Foot Oil.—"H." in the May number of THE CULTIVATOR, says that neat's foot oil, is now extensively made by separating the oil from beef tallow by pressing. Will Mr. H. be so kind as to let the readers of THE CULTIVATOR know how it is done, from beginning to end? H. K.

Coal Tar for Bridges.—In reply to C. BAKER, of Triangle, N. Y., I would state that a few gallons of coal tar applied to the wood work of a large bridge, would save more than a hundred dollars. It should be applied with a white-wash brush, to the mortises, tenons, pins, and to all other places where timbers come in contact with each other. Bridges, frames, tools and implements, always give way, or decay first at the joints. But, by applying a good coat of coal tar to the joints, the water will be effectually excluded. Coal tar is far better for excluding water from the joints than a heavy coat of paint. Tar the string pieces of the bridges where they rest on the buttments; and give the ends of every timber a good smearing; and apply a good coat of tar on the top of the sleepers, and fill the sun-checks with it; and, it will be seen that, by simply tarring the joints, a bridge will last twice, and sometimes thrice as long as it would without tarring. I use it for all such purposes. I tar the under side of plank walks, and "dip" the sleepers of walks in tar. Joints of gates, and joints of coarse picket and board fences, are always tarred. Sills of houses and barns, where they will be at all exposed to wet, are well tarred. And every fence post is well tarred for a foot below the surface of the ground to a few inches above the surface. Cover the entire bridge with a heavy coat, and then throw fine sand into it.

S. EDWARDS TODD.

Fences.—Tell me, brother farmers of the Co. GENT., of the cheapest and best way to make durable fences across a small creek that in time of a freshet floats off a common worm capped rail fence? Please communicate your different ways of making them substantial, and by so doing you will confer a favor. JOHN SCOTT.

Bacon Bugs.—I wish to inquire through your paper, if there is any way in which I can rid my cupboards of what I have always known as the Bacon Bug? It is a little hard-shelled animal, the eggs of which produce a hairy worm, and they not only trouble bacon and meats, but get into pies or cake, or anything that is set away for a few days. I have been waging a "war of extermination," but the more I kill the faster they come, and I am about ready to give up vanquished. E. M. W.

Churning Milk.—I would be very grateful for some information through your columns, from some one who has had experience in the business, whether it would be profitable to churn the milk while sweet and fresh, right from the cow, or whether it must stand awhile before it can be churned into butter, and what kind of churn would be preferable, provided a dog power should be used in churning—whether the old fashioned dash churn would not be as good, if not better than any other? I have heard of milk being churned fresh from the cow, but have never seen it done. It can be done, I think it must be quite an advantage in very warm weather, when it is very hard to make good butter, and if one has a refrigerator and ice-house.

I see no reason why good hard butter may not be made in the hottest weather. If some correspondent will give us reliable information in this matter, it will be very thankfully received.

Beekmantown, N. Y.

E. S.

The Hunter Weevil.—I enclose you some little black bugs that we have found very plenty in digging around the hills of corn in search of cut worms. As they are entirely new to me, and no work I have on entomology can enlighten me, perhaps you will be kind enough to do so. My first impression on finding them was that they, like myself, were looking for the worms, but I could not find any action or sign to warrant that conclusion. My men say that they have found them fast to the young corn-stalks in a number of instances, though they appear only to draw the juice and not to cut at all. They work only under ground. In my own search I never found them in the hills in which there were grubs. S. T. *Duchess Co.* [These insects are the *Hunter Weevil* (*Sphenophorus venatus*, Say) of which we gave an account in the Co. GENT. June 14, 1855—and noticed again early in August, 1857, specimens from Bainbridge, N. Y.—and July, 1861, specimens were sent from W. M. Beauchamp, Skaneateles, N. Y., which were probably noticed also. A. FITCH.]

A Sick Sheep.—"Quebec" has a Hampshire-Down ewe, four years old, with twin lambs by her side, suffering from a complaint quite unknown in this part of the country. She is in good condition and health, and eating well, but at times during the day she crawls about on her knees, and if forced on to her feet she limps dreadfully, appearing to be in great pain. Her feet are perfectly sound. Will some of our correspondents give him the name of the disease, and suggest a remedy for it?

Grinding or Boiling Corn.—Please inform me through the Co. GENT., which is the most profitable for feeding hogs, corn boiled whole or corn ground, (by carrying it 7 miles to mill); and also as to barley, will it pay better to have it ground or boiled whole, and will barley kill hogs by feeding it alone, without any other grain? I have a convenient boiler that will hold just four bushels. W. H. P. [There is no doubt that the grinding would be best, especially if the meal were made into pudding with water, or steamed. The unground and boiled corn would, doubtless, to a considerable degree, escape mastication and be imperfectly digested; but the question occurs, which may be difficult to answer satisfactorily, whether the labor of drawing seven miles to mill and the reduction of toll, would not more than compensate for the advantages of grinding. We know of no reliable experiments of an accurate character, to determine the relative benefits of these two modes, and recommend our correspondent to give them a fair and careful trial.]

Iron Toothed Horse Rake.—I have been looking for some time back for an advertisement, in the COUNTRY GENTLEMAN, of the horse rake made with iron teeth, drawn by wheels; the teeth are crooked and are elevated when full, instead of being turned over as in the old revolving rake. I should like to purchase one if I knew where I could procure it. Can you tell me where they are manufactured, and if there is any agency for them in Oneida county? C. L. U. *Prospect Hill Farm.*

Churning Milk, &c.—Can you, through THE CULTIVATOR, inform me if it is practicable to make butter from sweet milk on a large scale, say from 30 cows? If you cannot give the desired information, I would like to be referred to some one who can give me the details of the process, as well as its merits and demerits. I would like to know if the best quality of butter can be made when cows are green soiled? L. S. *Borodino, N. Y.* [Will some of our butter-makers answer this?]

Soot as a Fertilizer.—D. B. R.—Soot has been used in England with much advantage as a top-dressing for wheat, oats and barley, and has also been applied to grass lands, potatoes and turnips. Twenty to thirty bushels per acre are applied in this way, in early spring. For potatoes, it may be applied in the hills with the sets. If any of our readers have used it, we should be pleased to hear the results.

Power Churn.—Can you inform me where I can find a churn of which a model was exhibited at Albany last February, but no large size churn. The price I believe was \$25. J. T. *Rose Hill.* [We presume our correspondent refers to the model of machinery to run a dash churn, shown by E. Hoag of Rensselaerville, in this county.]

Thrush.—Will some of your intelligent contributors be so kind as to give their best judgment as to how I shall cure the thrush in a horse's foot? I have a very valuable horse that

is seriously injured by this disease, and a year's application of my best efforts have so far failed to work a cure. By so doing they might not only do me a favor, but many others. HAMPTON DODGE. *Buffalo, N. Y.*

Pickling Cucumbers.—Some one in THE CULTIVATOR inquires how to pickle cucumbers. Take of good, strong cider vinegar two gallons, water one gallon, and one pint of salt, or in that proportion. Stir the pickles every day so long as you put in the cucumbers. Be sure to have sufficient brine to cover the whole. When you have done putting in the cucumbers, take a piece of linen or cotton cloth, the size of the inside of the barrel, and lay on top of the brine. They will need but little soaking to be fit for use. Sliced thin, and put in vinegar over night, they will do to use in the morning. LEONARD A. NORTON. *Bristol, Conn.*

Hungarian Grass Injurious to Sheep, &c.—Your valuable paper of May 19, contains a communication from Mr. E. A. KING, recommending Hungarian Grass as making the "very best of feed" for sheep. Now my experience with it, taught me exactly the reverse. My ewes got weak, had no milk, and in consequence did not raise hardly any lambs at all that season, although they had the full run of the stack and good shelter. The next winter I saw one of my neighbors feed Hungarian Grass to sheep. I stopped and told him my experience with it. He told me that his sheep were doing well on it, and that he was not afraid of it. Well, that seemed conclusive; but I could not help mistrusting that all would not come out right; still two years went round before I happened to question my neighbor again about his sheep and Hungarian Grass; but one day as I was passing, I saw him feeding his sheep, so I asked him if he still raised and fed Hungarian Grass to his sheep. "Oh, no," was his answer, "and since we don't feed it any more, we raise twice the amount of lambs, and the ewes are much stronger and healthier." I always heard farmers say that *millet*, but not *Hungarian*, was good for sheep or horses—but as to the Hungarian, you cannot find one that will risk it with his horses, although when it was first sown here some praised it very much, but experience has discarded it entirely. The Mississippi is very low for this time of the year, and still falling—farmers wishing much for rain. JOHN ZINGRE. *Hancock Co., Ill., June 3, 1864.*

Trees Injured by Fire.—My shade trees were injured by the late fire at Glens' Falls. The bodies were not scorched, but the leaves were, and still remain upon the trees. Can you tell me if by any means I can save the trees? I am applying water plentifully to the roots. Is there any hope in the case? E. H. R. *Glens' Falls, June 8.* [Our correspondent will have discovered before this time, whether his trees are killed. If the green leaves are all destroyed, and there is no indication of their being replaced by new growth, they are undoubtedly dead.—If, on the other hand, the trunks are but partially injured, and a portion of the leaves and branches remain green, they will continue to grow, although the trees may be more or less disfigured or mutilated. By next spring the dead branches may be pruned off; and, in the meantime, shading any partially injured portion from the sun would be useful.]

A New Apple.—I cut from the Cincinnati Gazette of June 2, the following: "A NEW APPLE—THE MISSOURIAN. The above is the name of a new apple originated in Western Missouri, and distinguished for its long keeping, and also from the fact that it retains its delicious flavor as late as July. The tree is a rapid grower and regular bearer, some of the fruit having been taken down the Mississippi and preserved in good condition for over a year. The apple is considered by competent judges as being one of the most valuable known. In honor of the fine fruit growing region of Western Missouri, it has been named 'the Missourian.'" Will the editors or some correspondent of the Co. GENT., inform us whether the Missourian is really a new apple, or already known to the West, by some other name? If a new apple, then be kind enough to give us a full description, and such information as will enable us to procure the trees this fall? BUCKEYE. *Southern Ohio.* [Perhaps some of our Missouri readers can satisfactorily answer the above.]

Texan Beans.—A Maine subscriber of the CULTIVATOR sends us a sample of a Bean under this name, which he considers the best to eat, and the greatest to yield he has ever planted. He plants in drills about ten inches apart, and has counted 90 pods on one stalk. It is rather a late variety.

AGRICULTURAL EDUCATION.

"Industrial University Education" is the title of a pamphlet from the pen of Prof. J. B. TURNER of Illinois, published by Emery & Co., of Chicago. It is an essay "written at the special request of the Commissioner of Agriculture for the forthcoming report of his Department," as we are informed by a prefatory note from the publishers; but the Commissioner, after examination, declined to insert it. We have seldom had occasion to agree with Mr. NEWTON in his official course, but in the present instance his decision is certainly worthy of approval.

Prof. Turner has fallen into the common error of dealing wholly in generalities; after a careful perusal of his twenty pages, with the most sincere desire of profiting by the experience of "a pioneer in the agricultural educational movement," and with every disposition to give him an impartial hearing—we are obliged to confess that our ideas on the subject are if anything much less clear, and our faith in these institutions less firm than when we began. As a tirade against all schools and means of education yet known to the world, his essay is tremendous in assertion and invective, but it seems to us singularly devoid of argument; the strongest point which we can perceive in support of the views laid down, being that the author himself, after nearly 30 years "as pupil and professor," should display so little of the logical consistency and mathematical exactness which academical studies are supposed to promote.

But details, we are informed at the conclusion, have been purposely avoided, "from the conviction that all such efforts before the public at large will be perfectly useless." We cannot conceive how we are to get at the Professor's "general principles," without more detail; we certainly fear that unless he gives it, his principles will be open to very great misconception. For example we have the following in the early part of the essay:

"Our troubles have come, in part at least, from a stupid attempt to transfer the social and educational systems of the old rotten oligarchies and despotisms of England and of Europe, either in part or in whole to our own free land. * * * All this pretence, and subterfuge, and hypocrisy, and cant, and the scholastic and pedantic drill that sustains and upholds it, may work well still in England or Italy or Prussia, but with us in America it is quite played out. * * * For heaven's sake let our boys and girls have time to breathe, at least for one-half the year, the pure air of the world that God made, if we must sentence them to the solitary confinement of our so-called culture for the other half, and amid all the 'languages' and 'ologies' of heaven, earth, and hell, give them a little time, at least in their growing years, to breathe the free air, and inhale the pure oxygen that God has made," etc., etc.

The whole bearing of the first half of the essay, (and we are compelled to add of most of the second half) if we are at all competent to understand the use of the English language, of which the Professor is so fond, —is to decry all study and to prove that men like our present much respected President, who set out in life at splitting rails, are in fact "the best educated" for its duties—"I mean what I say," repeats the Professor, "the BEST EDUCATED, not simply the *most school ed.*" And yet when he touches upon what an "industrial university education" should be, he seems to look at all the "ologies of heaven, earth and hell" in a somewhat different light:

"When I have taught a boy merely to hold a plow," he says, "I have only taught him to be a two-legged jackass, twin brother to the four-legged team in front of him. But when I have taught him *truly and scientifically*, all the mighty mysteries of seas, stars, oceans, lands and ages that are concerned in that act of plowing, I have made a man of him: had we not better say an angel?"

Now which of these "generalities" are we to carry into detail for ourselves, the one that "no man can be a perfect fool" until he has been through the "tomfoolery of the schools," or this latter assertion that even to know something of the history, geography,

geology and astronomy which have any association with the act of plowing, may have a manly, if not an "angelic" tendency? We do not wonder that the labor of detail is left to the reader's imagination; the Prof. would find it difficult enough to specify the legitimate deductions from all his principles in the form of a university programme.

A word or two in the last extract we have taken the liberty to italicize for the reason that the Professor occupies a subsequent page to join in the popular outcry of careless thinkers, against the technical terms which are the only system human learning or practice has yet devised for the description and every day use of any of the arts and sciences. How can he teach anything "truly and scientifically" except through this medium? The mechanic's apprentice must learn the technical names of a hundred things he never heard of before; the farmer boy grows up in the use of terms peculiar to his business which are quite incomprehensible to the youth who has never been off the city pavements; and yet there are those who apparently expect that sciences like Botany or Anatomy, with all the minute detail and absolute necessity for accuracy characteristic of such studies, are to be conducted with no other vocabulary than that of ordinary conversation. This question is too old a one, and has been too well settled in practice, to require serious argument; the difficulties attendant upon "needless and unmeaning Greek and Latin technical terms," as the Professor styles them, are but of short duration to the student, and a "university" in which they should not be taught would not be likely to send forth pupils able to profit much either by their own studies or by the researches of men of science anywhere. "We propose to begin in the reformation of the world scripturally and orthodoxly," writes the Professor. He is undertaking a pretty big job—for an Agricultural University.

We said at beginning that the reading of this essay had failed to give us clearer views or stronger faith in Agricultural Colleges. And this is so, because even those who claim to have devoted the most thought to the subject, so generally fail in bringing to its discussion anything that is real and tangible and explicit toward lessening the difficulties by which it is surrounded. Many of these difficulties are doubtless in a large degree imaginary; others will disappear with time and experience. We remember now but one suggestion in Prof. Turner's pamphlet which bears upon a practical point, and that is this—that "the pupils of these new universities should be admitted only after they have become perfectly masters of *all the studies taught in the common schools* of their several States." And this idea has been broached before, in our own columns and elsewhere. But it scarcely seems to harmonize with all that the Professor has said in detraction of "our present scheme of public education." And after his sneers at the "ologies of heaven, earth and hell," at "cultivated men," and at the "infamous pretexts of pedantry" that characterize the sciences, we are surprised to see it asserted as one of the probable causes of failure in such an institution, that the "men placed at their head" should lack "proper learning and culture," and that "a man who has no knowledge of philosophy, no general culture, and no breadth and grasp of mind, necessarily sinks in the presence of the learned world, and drags the institution down with him." This is true enough; but why should the Professor care for "the learned world," which he has been abusing even to the extent of affirming that "it is *mainly our educated men* that have divided, paralyzed, wasted and destroyed both the Church and the State, and have perpetrated more appalling crimes, in a few years, than all the other classes have done in a century." We italicize this last charge, which is of too grave a nature to be lightly made, and are much inclined to ask the Professor for a single fact in support of such an unqualified and startling accusation.

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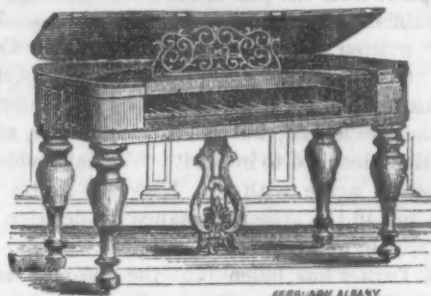
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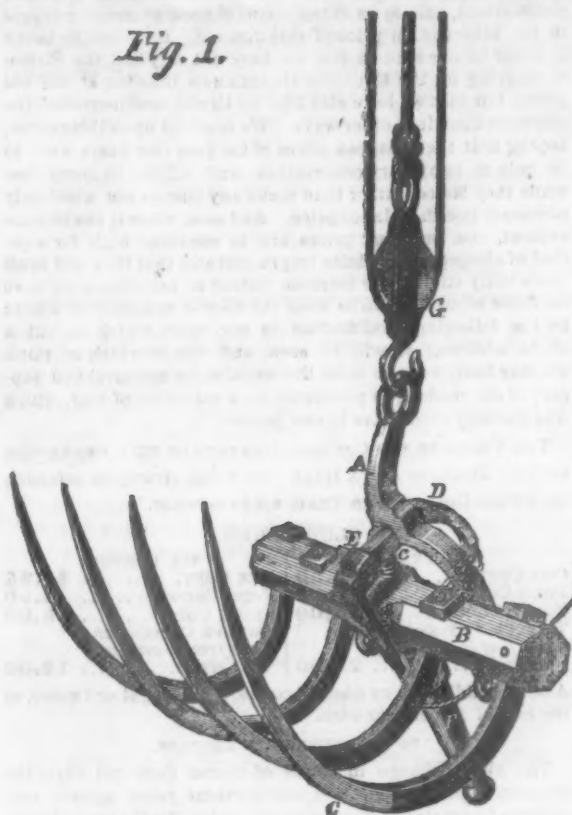
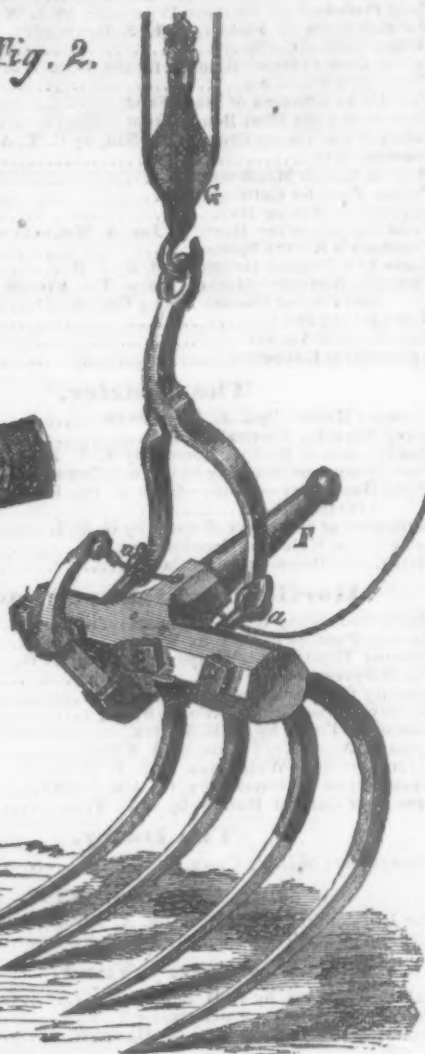


Fig. 2.



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